MHC-S9D

HCR-S9D

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

Ver 1.0 2001.09

- MHC-S9D is composed of following models.
  As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME

	MHC-S9D
AMPLIFIER	TA-S9D
DVD PLAYER	DVP-S9
TAPE PLAYER	TC-S9
FM STEREO, FM/AM SUPERHETERDYNE TUNER	ST-S9
FRONT SPEAKER	SS-S9
REAR SPEAKER	SS-RS270
CENTER SPEAKER	SS-CT270

HCR-S9D is composed of TA-S9D, DVP-S9, TC-S9, ST-S9, SS-RS270 and SS-CT270.

SPECIFICATIONS

Power requirements
European model: 230 V AC, 50/60 Hz
Australian model: 230 – 240 V AC, 50/60 Hz
Mexican model: 120 V AC, 60 Hz
Korean model: 220 V AC, 60 Hz
Thailand model: 220 V AC, 50/60 Hz
Other models: 120 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector

Power consumption
European model: 300 watts
0.6 watts (at the Power Saving Mode)
Other models: 300 watts

Dimensions (w/h/d)
TA-S9D: Approx. 280 x 128 x 350 mm
ST-S9: Approx. 280 x 108 x 340 mm
DVP-S9: Approx. 280 x 108 x 330 mm
TC-S9: Approx. 280 x 128 x 330 mm

Mass
TA-S9D: Approx. 7.7 kg
ST-S9: Approx. 2.1 kg
DVP-S9: Approx. 2.9 kg
TC-S9: Approx. 2.4 kg

Supplied accessories: AM loop antenna (1)
FM lead antenna (1)
Remote commander (1)
Batteries (2)
Speaker cords (5)
Video cable (1)
Optical cable (1)
Center and rear speaker pads (12)

Design and specifications are subject to change without notice.

PARTS LIST

Part No.	Description	Remark
	ACCESSORIES	
	**********	
1-476-600-11	REMOTE COMMANDER (RM-SD390AV) (AEP, UK)	
1-476-758-11	REMOTE COMMANDER (RM-SD395AV)	(E, AUS, EA, KR, MX, SP, TH)
1-501-374-11	ANTENNA, LOOP (AM)	
1-501-659-71	ANTENNA (FM) (E, AUS, EA, MX, SP, TH)	
1-501-804-11	ANTENNA (FM) (AEP, UK, KR)	
1-574-264-11	CORD, LIGHT PLUG (OPTICAL CABLE)	
1-769-306-11	CORD, SPEAKER (1.5m) (for SS-S9)	
1-769-433-11	CORD, SPEAKER (10m) (for SS-RS270)	
1-769-433-21	CORD, SPEAKER (2.5m) (for SS-CT270)	
1-782-981-21	CORD, CONNECTION (VIDEO CABLE)	
4-235-983-11	MANUAL, INSTRUCTION (ENGLISH) (UK, AUS, EA)	
4-235-983-21	MANUAL, INSTRUCTION (FRENCH) (EA)	
4-235-983-31	MANUAL, INSTRUCTION (SPANISH) (MX)	
4-235-983-41	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH)	(AEP, E, SP)
4-235-983-51	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN)	(AEP)
4-235-983-61	MANUAL, INSTRUCTION (SWEDISH, POLISH) (AEP)	
4-235-983-71	MANUAL, INSTRUCTION (ARABIC) (EA)	
4-235-983-81	MANUAL, INSTRUCTION (KOREAN) (KR)	
4-235-983-91	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (SP)	
4-235-984-11	MANUAL, INSTRUCTION (DANISH,FINNISH) (AEP)	
4-235-984-21	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
4-235-984-31	MANUAL, INSTRUCTION (GREEK) (AEP)	
4-235-984-41	MANUAL, INSTRUCTION (HUNGARIAN, CZECH) (AEP)	
4-235-984-51	MANUAL, INSTRUCTION (TURKISH) (AEP)	
4-235-984-61	MANUAL, INSTRUCTION (SLOVAKIAN) (AEP)	
4-236-752-11	MANUAL, INSTRUCTION (ENGLISH, THAI) (TH)	
4-236-961-01	FOOT (for SS-CT270/RS270)	
4-232-032-01	COVER,BATTERY (for RM-SD390AV/SD395AV)	

•Abbreviation

AUS	: Australian model	MX	: Mexican model
EA	: Saudi Arabia model	SP	: Singapore model
KR	: Korea model	TH	: Thailand model

MINI Hi-Fi COMPONENT SYSTEM

9-873-311-01
2001I0500-1
© 2001.9

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.09	New

TC-S9

SERVICE MANUAL

Ver 1.0 2001.09

AEP Model
UK Model
E Model
Australian Model

TC-S9 is the Tape deck section in MHC-S9D.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

Tape deck Section	Model Name Using Similar Mechanism	TC-S3
	Tape Transport Mechanism Type	TCM-230AWR41, TCM-230MWR41

SPECIFICATIONS

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	60 – 13,000 Hz (±3 dB), using Sony TYPE I cassette, 60 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
Dimensions (w/h/d)	Approx. 280 x 128 x 330 mm
Mass	Approx. 2.4 kg

Design and specifications are subject to change without notice.

STEREO CASSETTE DECK

9-873-281-01
2001I0500-1
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Home Audio Company
Shinagawa Tec Service Manual Production Group

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Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

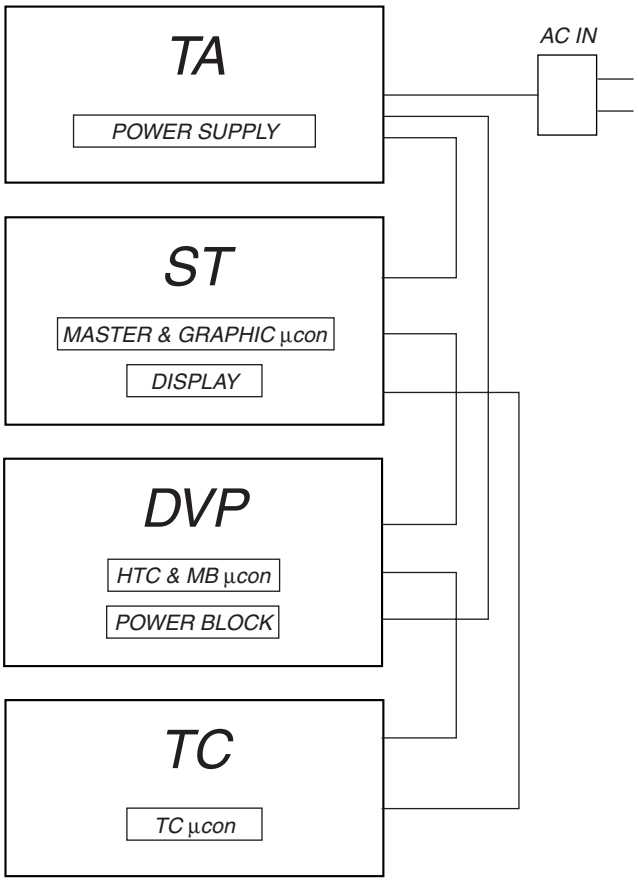
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

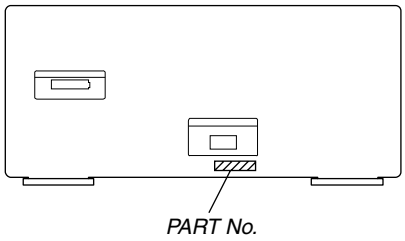
SECTION 1
SERVICING NOTES

This set is a component of the MHC-S9D.
The MHC-S9D system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.
In performing the repair, connect all components with the system cables.
Note: The precaution to the users is described on the label stuck on the back panel (DVD/video CD/CD player) and in the troubleshooting section in the Operation Manual.

System Configuration:



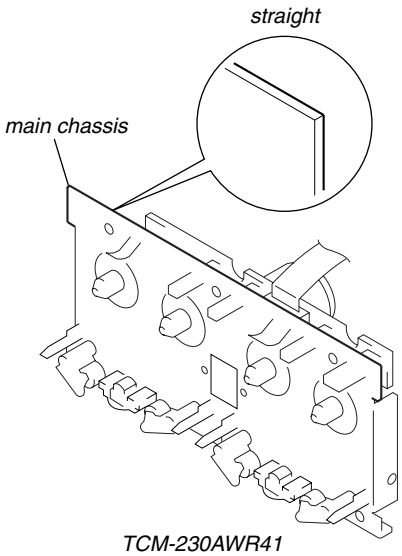
• MODEL IDENTIFICATION
– Rear Panel –



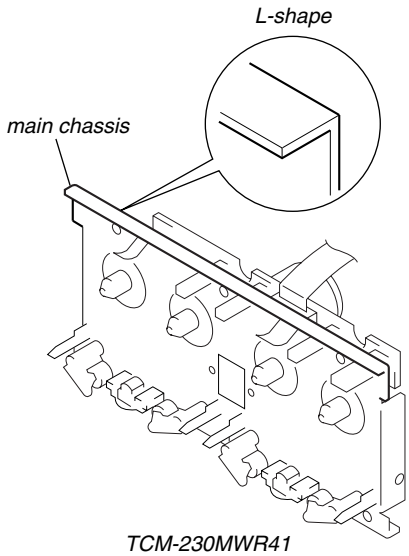
Model	PART No.
AEP and UK models	4-236-839-0□
Australian, Saudi Arabia and Korean models	4-236-839-1□
E and Singapore models	4-236-839-2□
Mexican model	4-236-839-3□
Thai model	4-236-839-4□

• TAPE MECHANISM DECK DISCRIMINATION

TCM-230AWR41 and TCM-230MWR41 are used for the tape mechanism deck of this set, and they can be discriminated as shown below.



TCM-230AWR41



TCM-230MWR41

SECTION 2
GENERAL

This section is extracted from instruction manual.

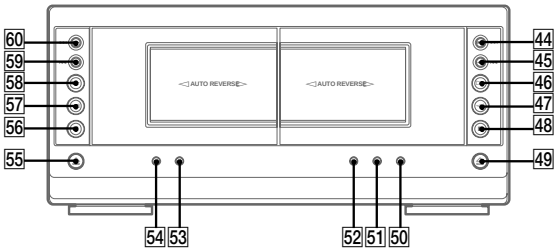
LOCATION OF CONTROLS

Parts Identification

The items are arranged in alphabetical order.
Refer to the pages indicated in parentheses ( ) for details.

Main unit

Cassette deck

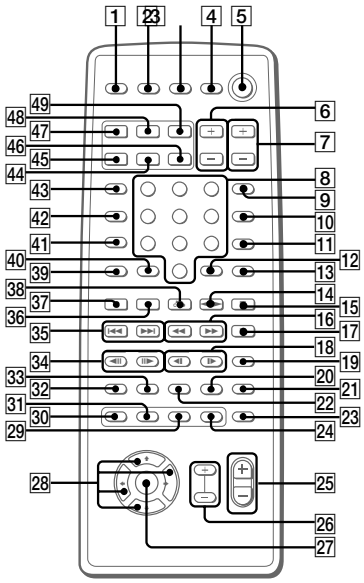


CD SYNC 51 (45, 46)
DIRECTION 54 (44, 45, 46, 55)
DOLBY NR 53 (44–46)
HI-DUB 52 (45)
REC PAUSE/START 50 (45, 46, 55)

– Deck A –
► (forward play) 58 (44, 55, 63)
◄ (reverse play) 57 (44, 63)
■ (stop) 56 (44)
▶▶I/▶▶ (go forward/fast forward) 60 (44)
I◀◀ /◀◀ (go back/rewind) 59 (44)
⏏ (eject) 55 (44, 63)

– Deck B –
► (forward play) 46 (44, 45, 63)
◄ (reverse play) 47 (44, 45, 63)
■ (stop) 48 (44, 45, 55)
▶▶/▶▶I (fast forward/go forward) 44 (44)
◀◀/I◀◀ (rewind/go back) 45 (44)
⏏ (eject) 49 (44, 63)

Remote control



ANGLE 32 (37)
AUDIO 22 (34)
CLEAR 12 (22, 29, 30, 36)
CLOCK/TIMER SELECT 3 (47, 56)
CLOCK/TIMER SET 2 (17, 47, 56)
DBFB 41 (48)
D.SKIP 9 (26)
DIGITAL 44 (57)
DISPLAY 47 (17, 31, 32, 43, 54)
DVD DISPLAY 23 (18, 19, 30, 32–34, 36–40)
DVD MENU 21 (27)
DVD SET UP 19 (18, 19, 24, 39)
ENTER 27
EQ 31 (52)
EQ ON/OFF 29 (53)
FILE SELECT +/– 26 (48, 49, 53)
FUNCTION 43 (18, 25, 27, 28, 36, 45, 46, 55, 57)
GROOVE 42 (48)
KARAOKE PON (Except for European model) 39 (54)
MD 46 (57)
Numeric buttons 8 (28, 30)
PLAY MODE 11 (25, 28, 29, 46)
REPEAT 10 (30)
RETURN ↩ 13 (27, 39, 40)
SELECT DVD ► 36 (20, 25, 27, 29, 30)
SET UP 24 (14, 16, 51, 53, 54)
SLEEP 1 (55)
SLOW ◀I/I▶ 18 (26)
SPECTRUM ANALYZER 48 (54)
STEP ◀II/II▶ 34 (26)
SUBTITLE 33 (37)
SUR 30 (51)
TAPE A ◀► 38 (44)
TAPE B ◀► 14 (44, 45)
TITLE 20 (27)
TUNER/BAND 37 (42)
TV I/⏻ 4 (13)
TV CH +/– 7 (13)
TV/VIDEO 49 (13)
TV VOL +/– 6 (13)
VIDEO 45 (57)
VOL +/– 25

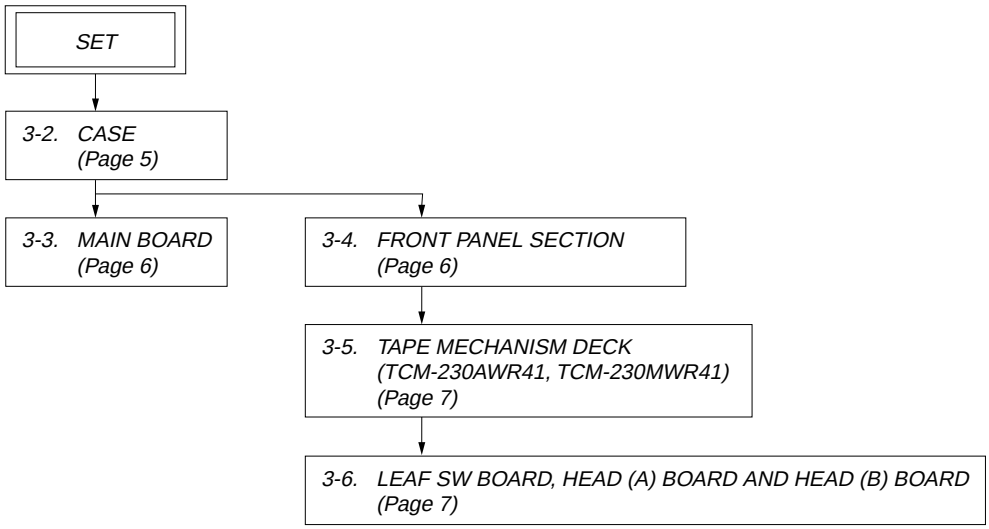
BUTTON DESCRIPTIONS

I/⏻ (power) 5
II (pause) 17
■ (stop) 15
◀◀/▶▶ (rewind/fast forward), TUNING –/+ 16
I◀◀ /▶▶I (go back/go forward), PRESET –/+, PREV/NEXT 35
↑/↓/←/→ 28
>10 40

SECTION 3
DISASSEMBLY

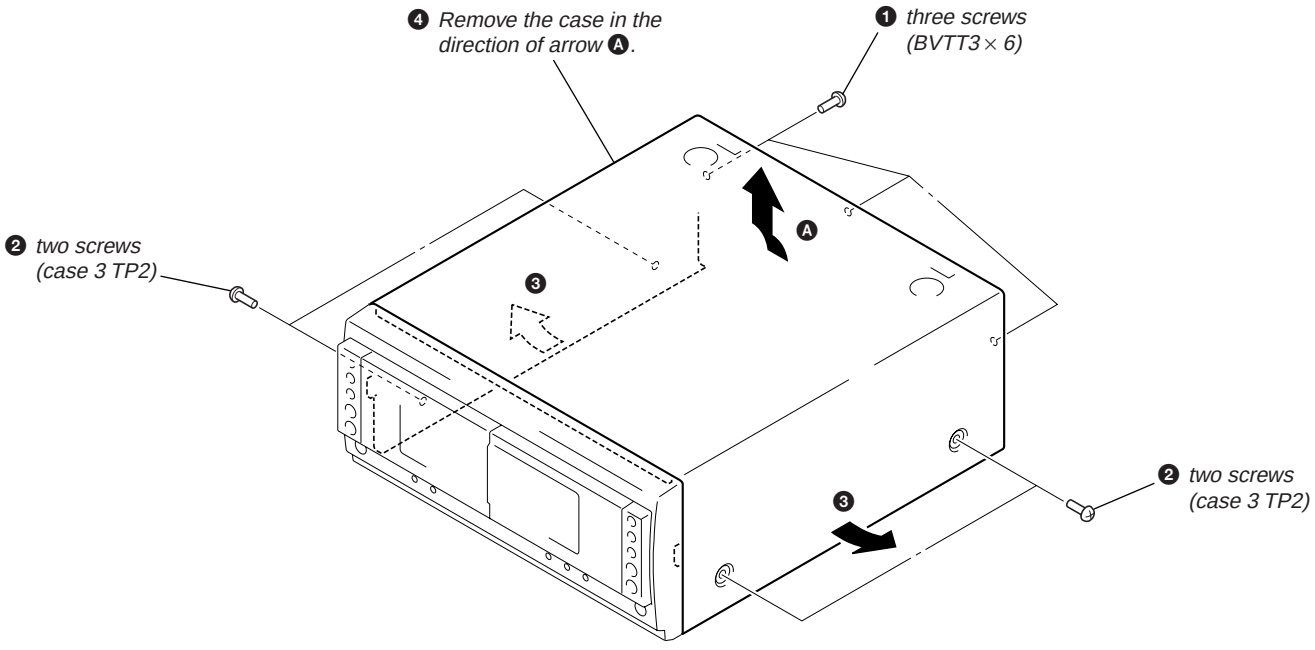
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

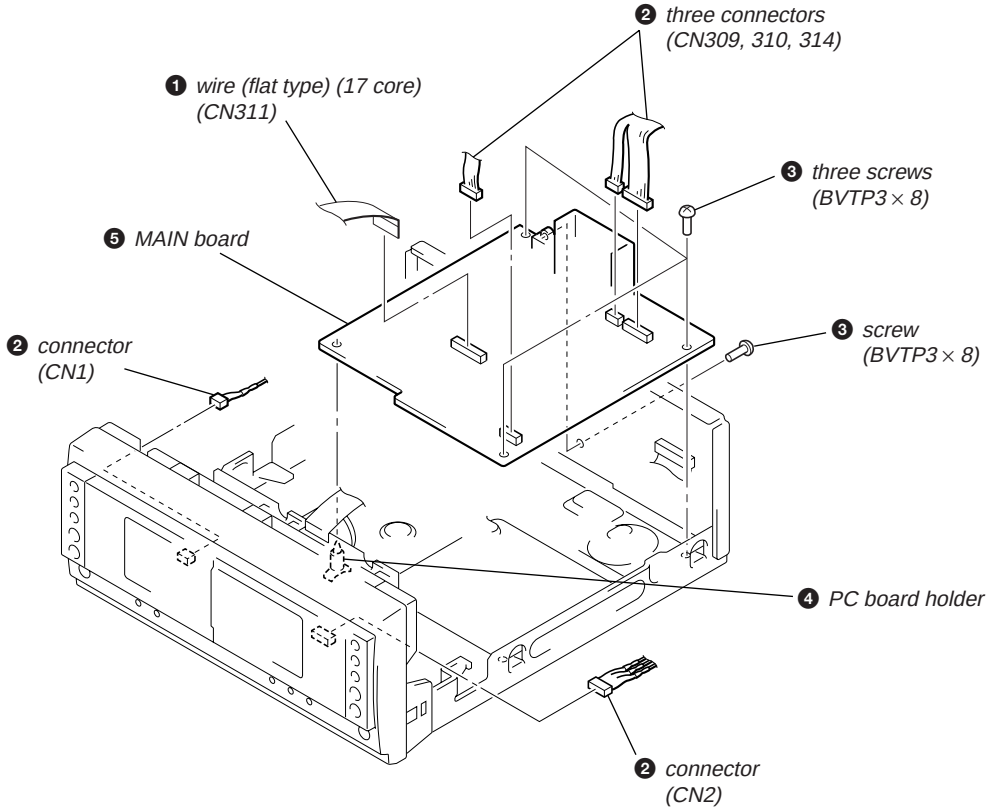

SET
3-2. CASE (Page 5)
3-3. MAIN BOARD (Page 6)
3-4. FRONT PANEL SECTION (Page 6)
3-5. TAPE MECHANISM DECK (TCM-230AWR41, TCM-230MWR41) (Page 7)
3-6. LEAF SW BOARD, HEAD (A) BOARD AND HEAD (B) BOARD (Page 7)

Note: Follow the disassembly procedure in the numerical order given.

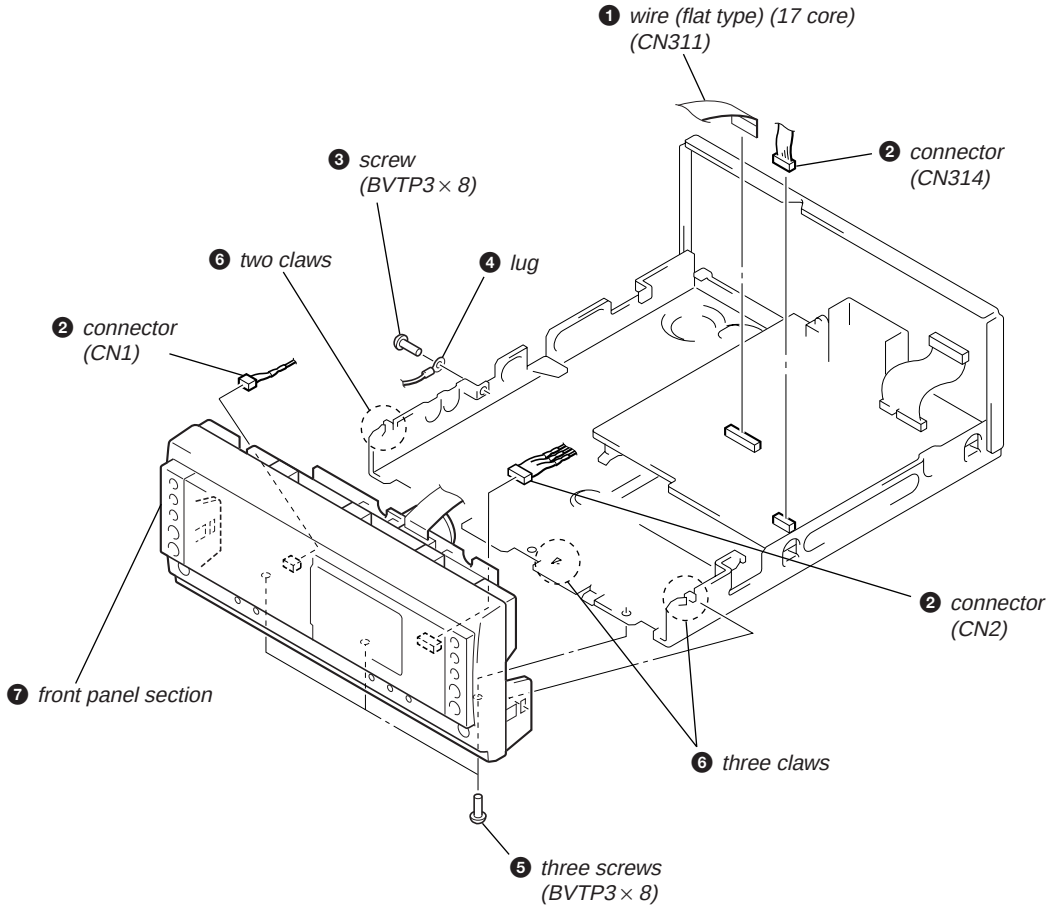
3-2. CASE



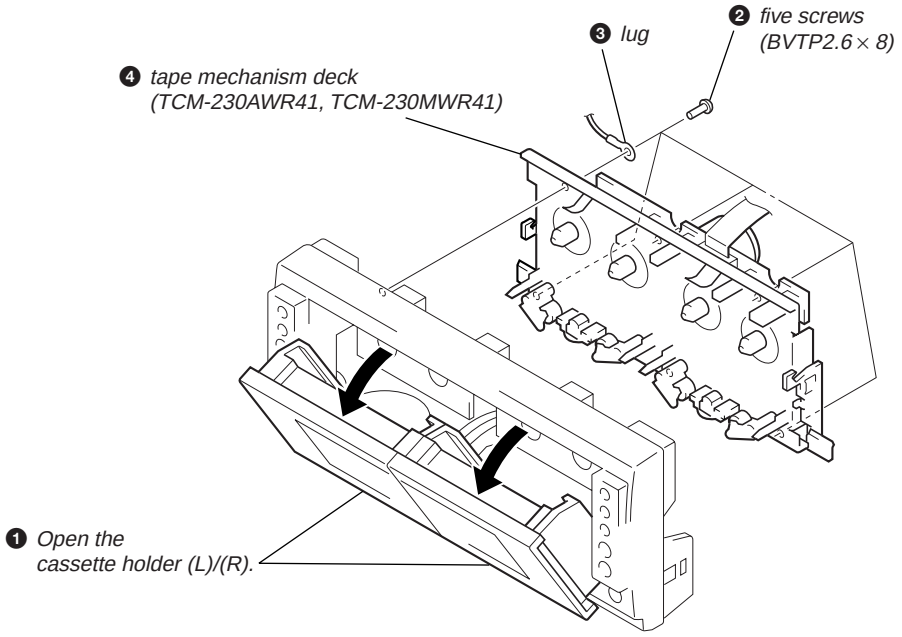
3-3. MAIN BOARD



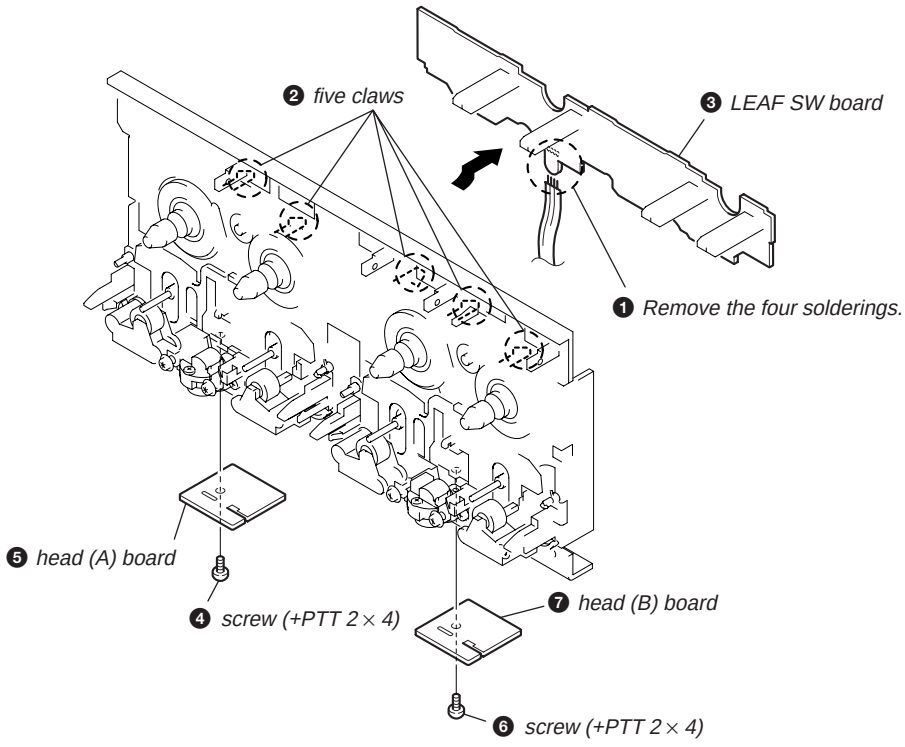
3-4. FRONT PANEL SECTION



3-5. TAPE MECHANISM DECK (TCM-230AWR41, TCM-230MWR41)



3-6. LEAF SW BOARD, HEAD (A) BOARD AND HEAD (B) BOARD



SECTION 4
TEST MODE

Note: Use following buttons in the test mode.
no mark : Button of Tape unit (TC-S9)
*1 : Button of amplifier unit (TA-S9D)
*2 : Button of DVD/video CD/CD unit (DVP-S9)

[MC Test Mode]

Enter the MC Test Mode

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. While pressing the both PLAY MODE *2 and ■ *2 buttons, press the DISC 3 *2 button.
3. "GROOVE" indication blinks on the fluorescent indicator tube in the midst of MC test mode.

Releasing the MC Test Mode

To release from this mode, press the I/⏻ *1 button or disconnect the power cord.

[DECK Test Mode]

In the DECK test mode, it operates as follows.

Cancellation of the linear mute of DOLBY IC (IC301)

- It become cancellation automatically when it is possible to enter a MC test mode.

AMS Checking

Procedure:

1. Enter the MC test mode.
2. Insert a test tape AMS-110A or AMS-120 to Deck A.
3. Set TAPE A function.
4. Press the DVD SYNC button to enter the AMS test mode.
5. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the ASM signal twice.
6. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
7. When the check is complete, a message of either OK or NG appears.

(To check an AMS of the B deck, select TAPE B function.
After that, press DVD SYNC.)

ALC Checking

Procedure:

1. Enter the MC test mode.
2. Insert a tape into Deck B.
3. During Recording, Keep holding down the below keys.
   ■ *2 + REC PAUSE/START
   ALC could keep ON while these keys keep being pressed, ALC could keep OFF while keys are released.

Double Speed REC Mode

Procedure:

1. Enter the MC test mode
2. Insert a tape into Deck B.
3. During Recording, keep holding down the below key.
   HI-DUB
   Double speed recording is going on while the key keeps being pressed.

REC/PLAY Checking

- The mode to PLAY by rewinding recording contents automatically.

Procedure:

1. If recording A surface, it returns automatically at the point of the recording beginning and it replays when pressing TAPE B ▶▶.
2. If recording B surface, it returns automatically at the point of the recording beginning and it replays when pressing TAPE B ◀◀.

SECTION 5
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads, erase head, capstan, pinch rollers, rubber belts, idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION 0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.
8. Please refer to "SERVICING NOTES" (page 3) before adjustments.

• Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300J	315 Hz, 0 dB	Level Adjustment

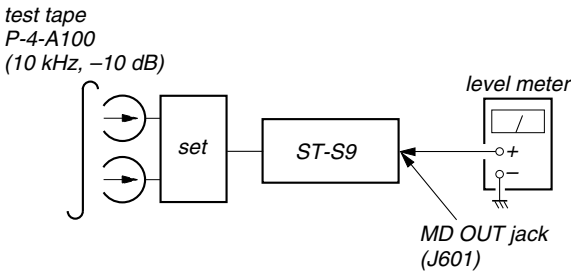
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

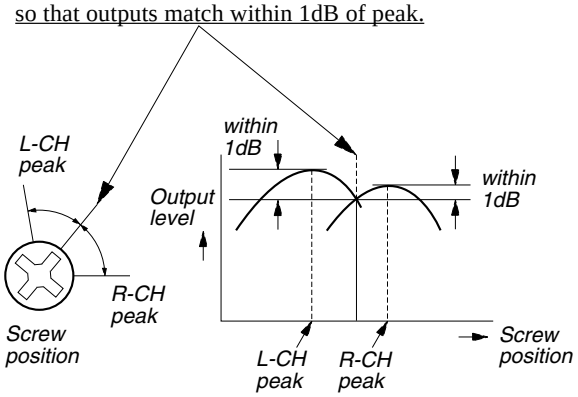
Note: Perform this adjustments for both decks

Procedure:

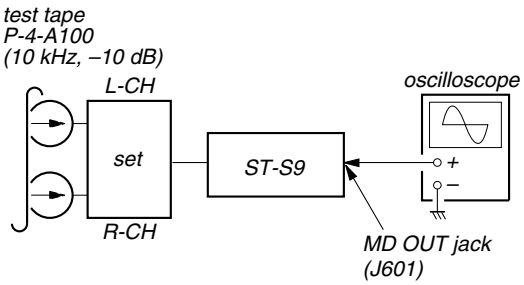
1. Mode: Playback

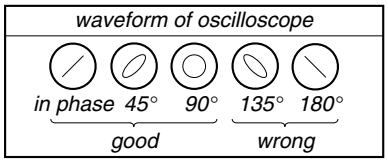


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



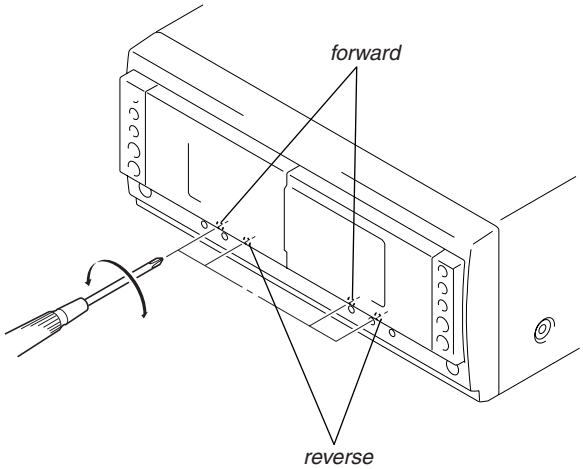
3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Playback Head (Deck A).
Record/Playback/Erase Head (Deck B).



Note: Use following buttons in the test mode.
no mark : Button of Tape unit (TC-S9)
*1 : Button of amplifier unit (TA-S9D)
*2 : Button of DVD/video CD/CD unit (DVP-S9)

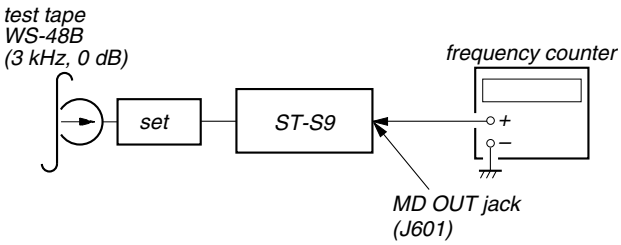
Tape Speed Adjustment DECK B

Note: Start the Tape Speed adjustment as below after setting to the test mode.
In the test mode, the tape speed is high during pressing the HI-DUB button.

Procedure:

1. Turn the power switch on.
2. While pressing the both PLAY MODE *2 and ■ *2 buttons, press the DISC 3 *2 button.
(The "GROOVE" on the fluorescent indicator tube display while in the test mode.)
To exit from the test mode, press the I/⏻ *1 button.

Mode: Playback



1. Insert the WS-48B into the deck B.
2. Press the ► button on the deck B.
3. Press the HI-DUB button in playback mode.
Then at HIGH speed mode.
4. Adjust RV1001 on the LEAF SW board so that frequency counter reads 6,000 ± 180 Hz.
5. Press the HI-DUB button.
Then back to NORMAL speed mode.
6. Adjust RV1002 on the LEAF SW board so that frequency counter reads 3,000 ± 90 Hz.

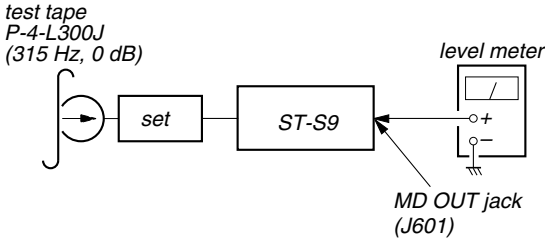
Adjustment Location: LEAF SW board

Sample Volue of Wow and Flutter: 0.3% or less W. RMS
(WS-48B)

Playback Level Adjustment DECK A DECK B

Procedure:

Mode: Playback



1. Confirm that level difference between the channels is with ± 0.5 dB.
2. After check, adjust the following RVs.
Deck A is RV302 (L-CH), Deck B is RV303 (L-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

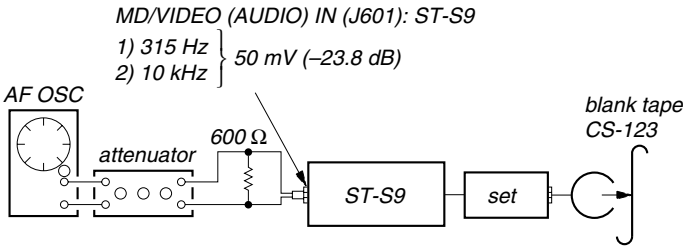
MD OUT jack (J601) PB level: 334.4 to 748.7 mV
(–6.8 ± 0.5 dB)

Adjustment Location: MAIN board

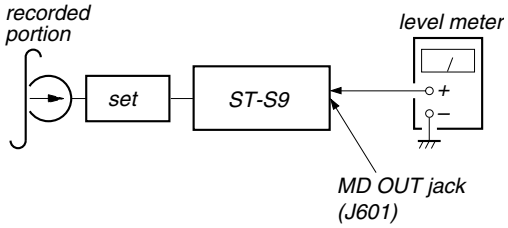
REC Bias Adjustment DECK B

Procedure:

1. Insert a tape into Deck B.
2. After press [REC PAUSE/START] button, press [REC PAUSE/START] button, then recording start.
3. Mode: Record



4. Mode: Playback



5. Confirm the playback signal recorded in step 3 becomes adjustable level as follows.
   If these levels are not adjustable level, adjust the RV304 (L-CH) and RV354 (R-CH) on the MAIN board to repeat steps 4 and 5.

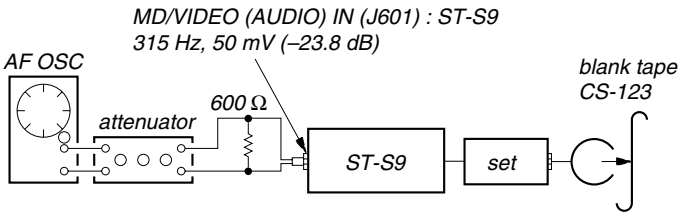
Adjustable level: Playback output of 315 Hz to playback output of 10 kHz: ±1.0 dB

Adjustment Location: MAIN board

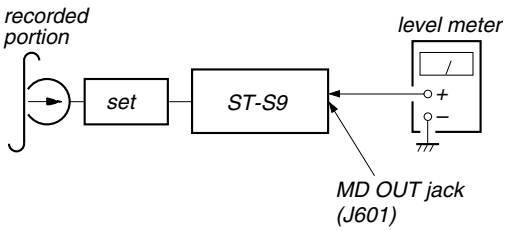
REC Level Adjustment DECK B

Procedure:

1. Insert a tape into Deck B.
2. After press [REC PAUSE/START] button, press [REC PAUSE/START] button, then recording start.
3. Mode: Record



4. Mode: Playback

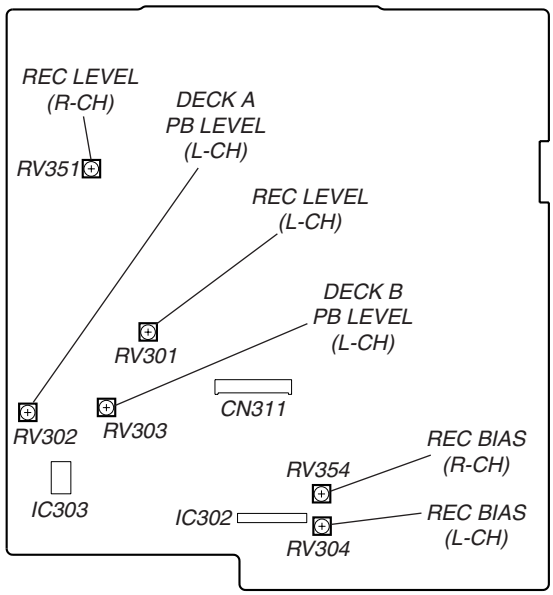


5. Confirm the play back signal recorded in step 3 becomes adjustable level as follows.
   If these levels are not adjustable level, adjust the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 4 and 5.

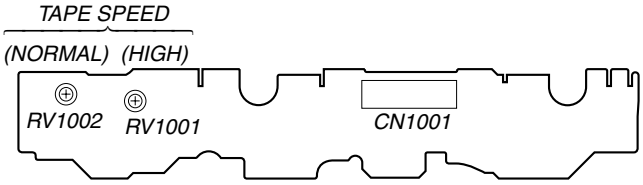
Adjustable level:
MD OUT jack PB level: 47.2 to 53.0 mV (–27.3 to –26.3 dB)

Adjustment Location: MAIN board

[MAIN BOARD] (Component Side)



[LEAF SW BOARD] (Component Side)



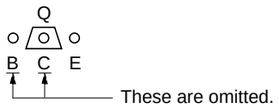
MEMO

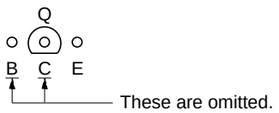
SECTION 7
DIAGRAMS

7-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Boards:

- ○——— : parts extracted from the component side.
- ▬▬ : Pattern from the side which enables seeing.
- Indication of transistor.





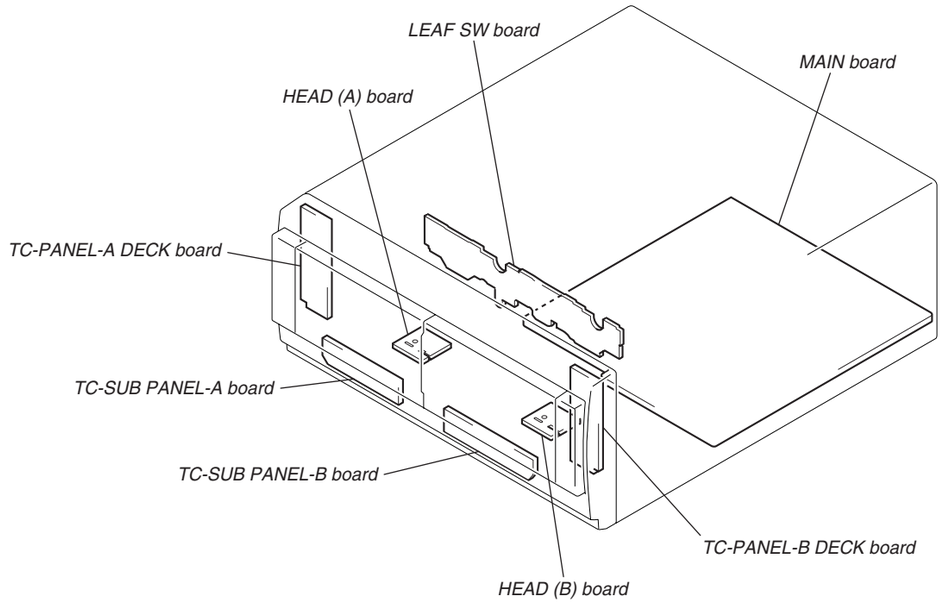
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⊣⊢ : fusible resistor.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

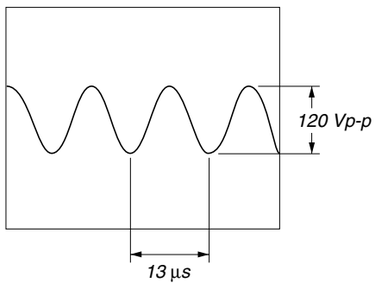
- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : PB
  ⟨⟨ ⟩⟩ : REC
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▷ : PB
  ▷▷ : REC
- Abbreviation
  TH : Thai model

• Circuit Boards Location

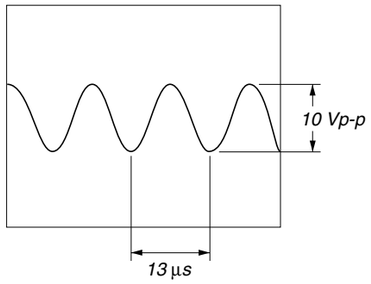


• Waveforms
– MAIN Board –

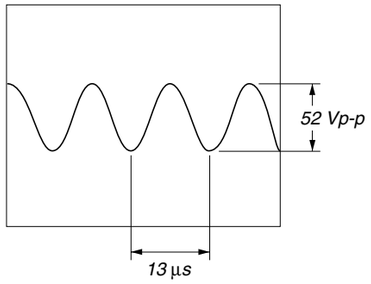
❶ T301 ④ (DECK-B REC mode)



❷ Q301, 303 (collector) (REC mode)

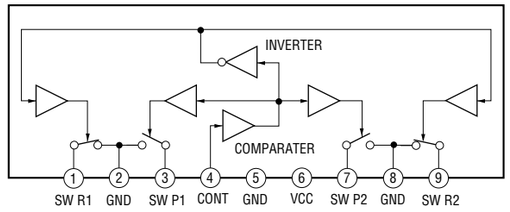


❸ NO312 ⑥ (L-REC), ③ (R-REC) (DECK-B REC mode)

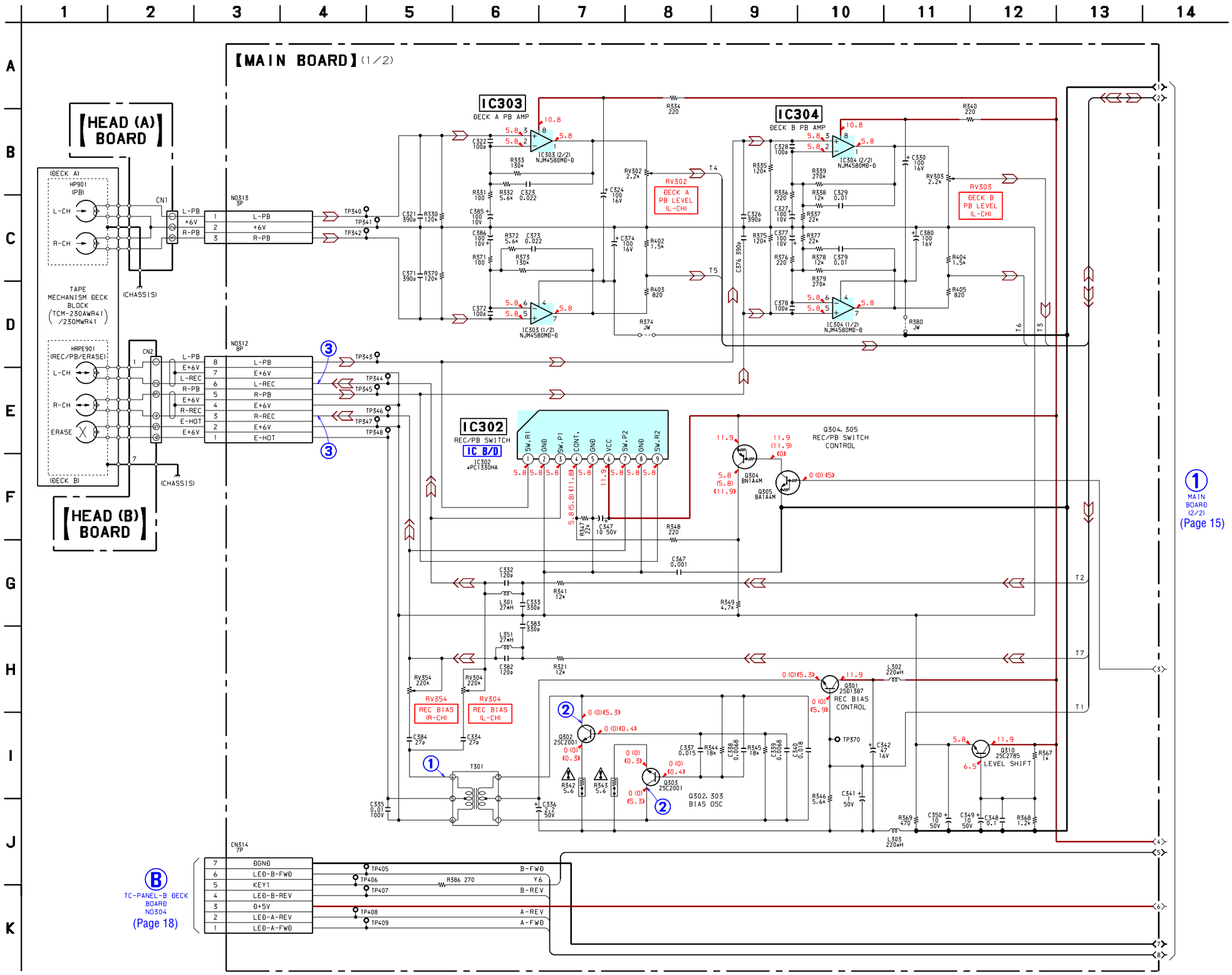


• IC Block Diagram
– MAIN Board –

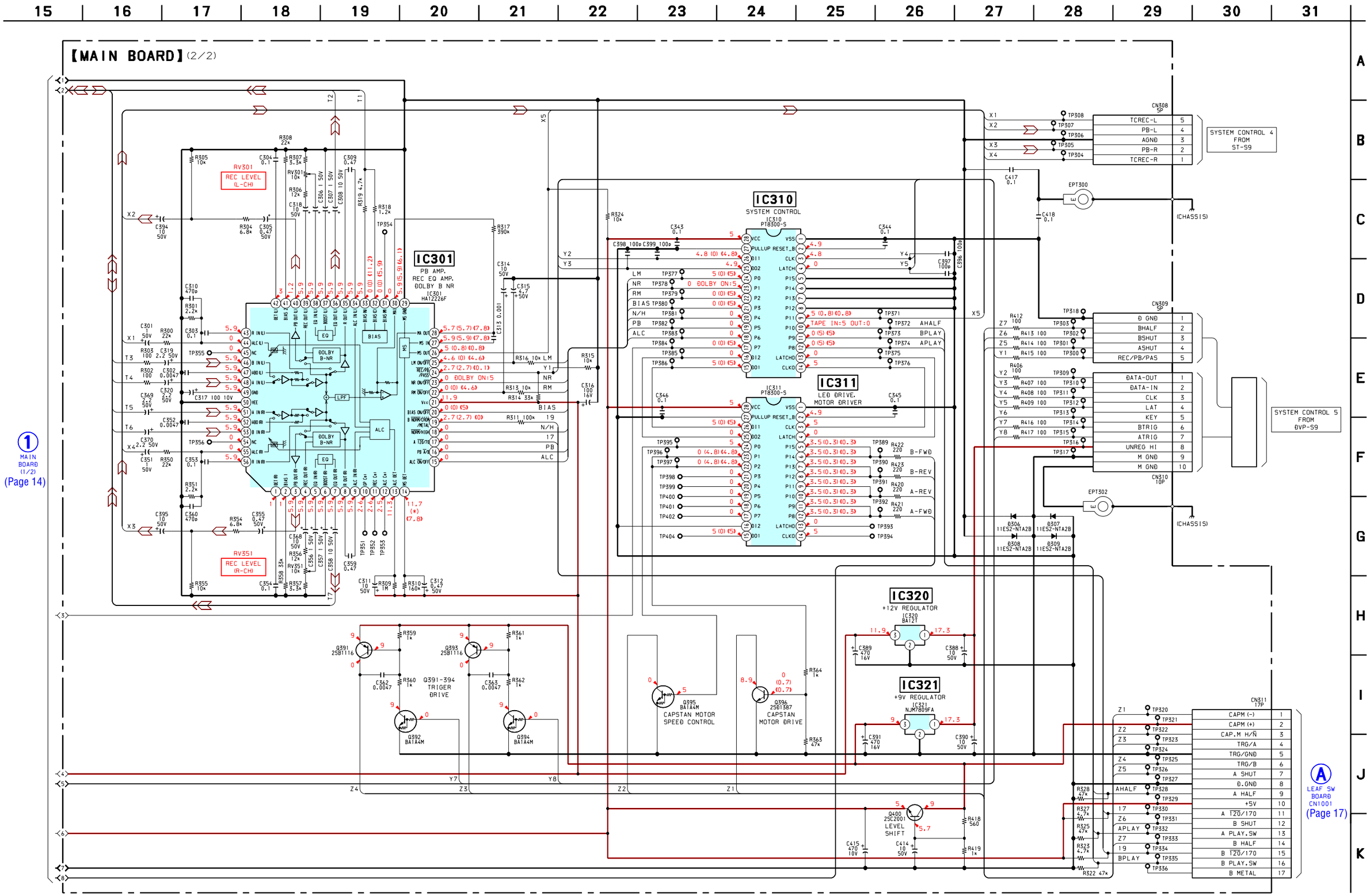
IC302 μPC1330HA



7-2. SCHEMATIC DIAGRAM – MAIN Section (1/2) – • See page 13 for Waveforms. • See page 13 for IC Block Diagram.



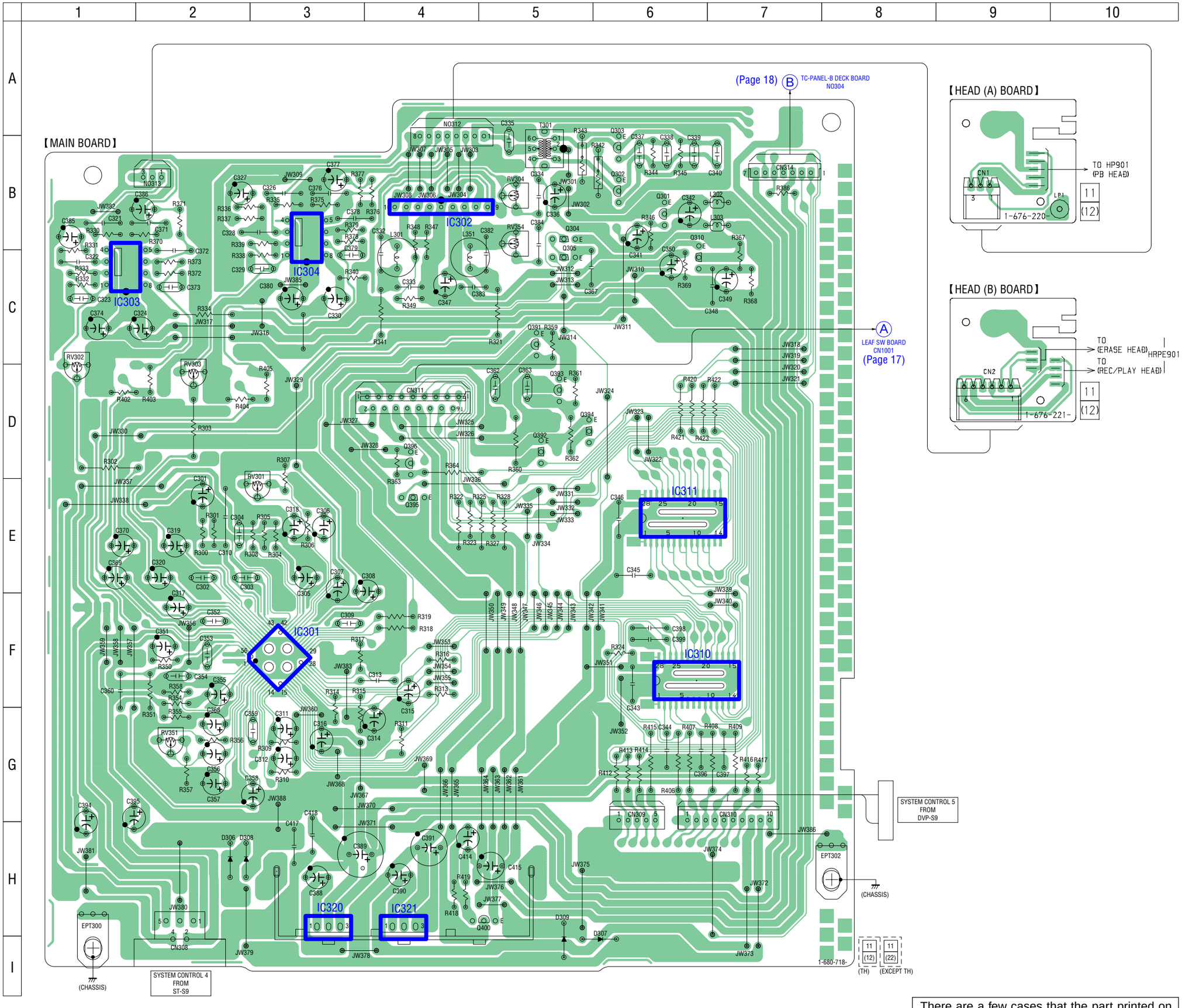
7-3. SCHEMATIC DIAGRAM – MAIN Section (2/2) –



7-4. PRINTED WIRING BOARDS – MAIN Section – • See page 13 for Circuit Boards Location.

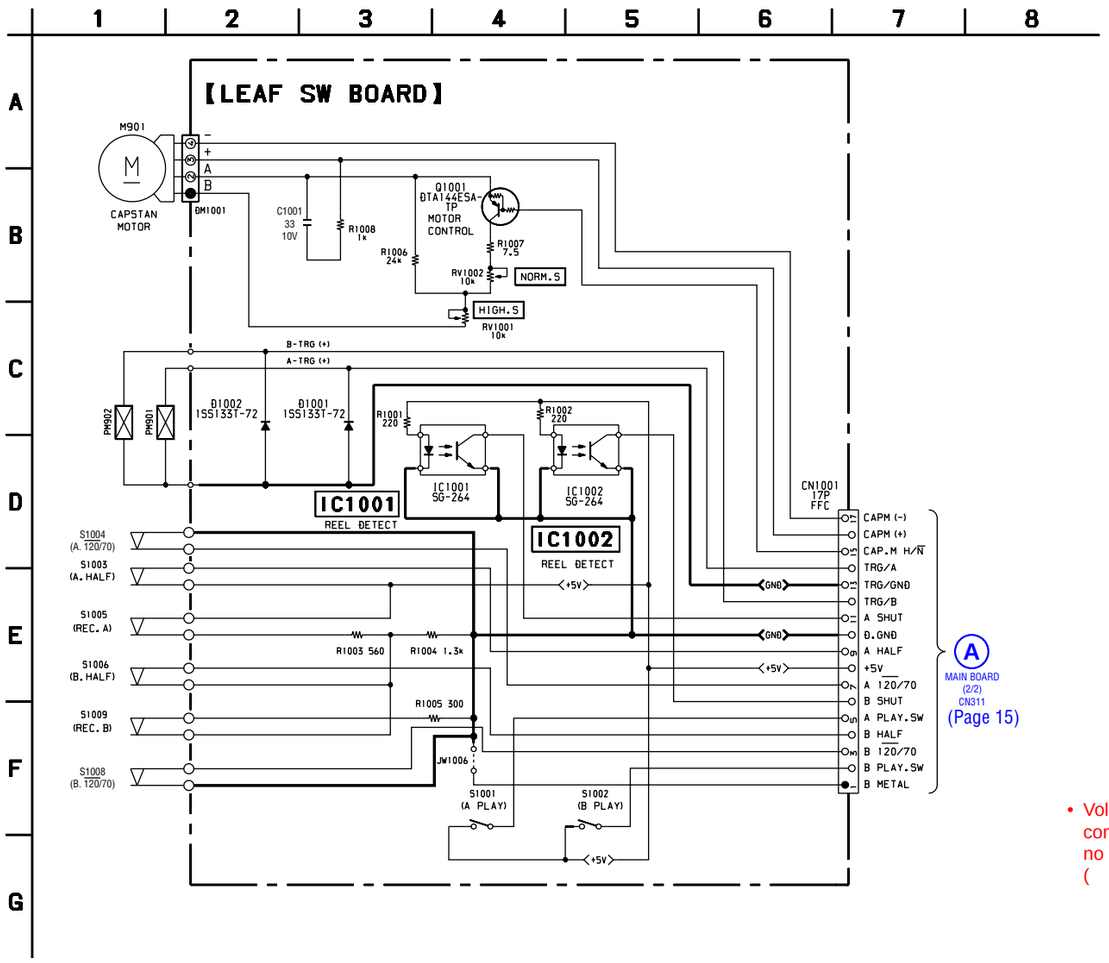
- **Semiconductor Location**

Ref. No.	Location
D306	H-2
D307	I-6
D308	H-2
D309	H-5
IC301	F-3
IC302	B-4
IC303	C-1
IC304	B-3
IC310	F-6
IC311	E-6
IC320	H-3
IC321	H-4
Q301	B-6
Q302	B-6
Q303	B-6
Q304	B-5
Q305	C-5
Q310	C-6
Q391	C-5
Q392	D-5
Q393	D-5
Q394	D-5
Q395	E-4
Q396	D-4
Q400	H-5



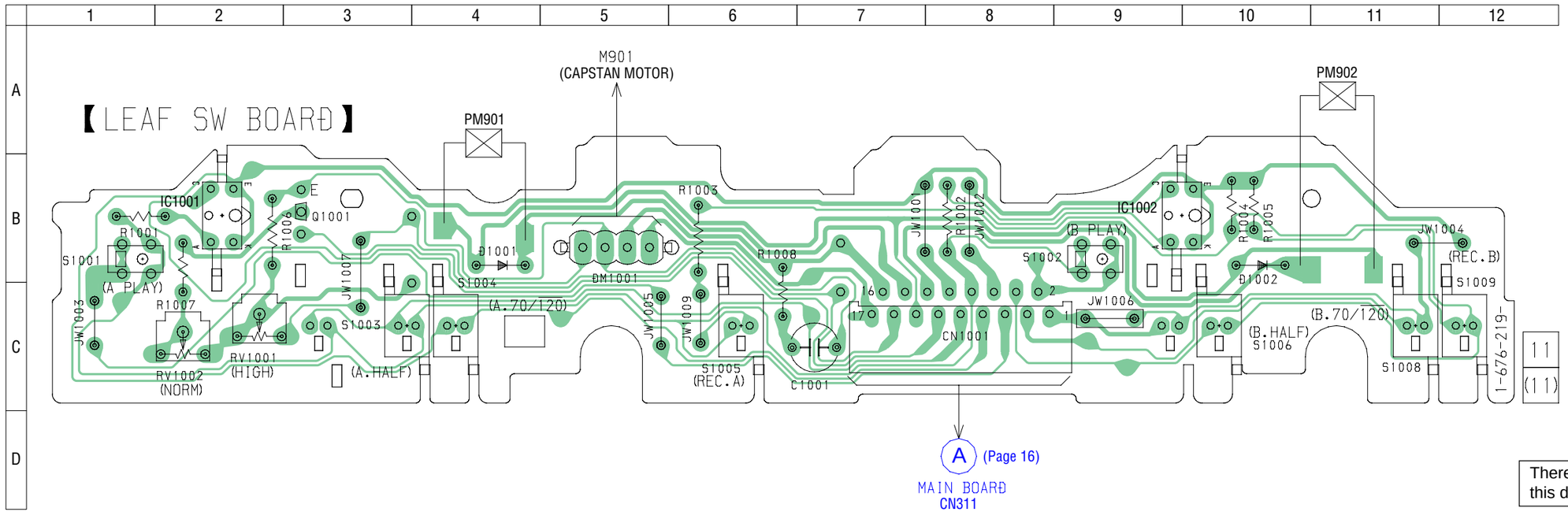
There are a few cases that the part printed on this diagram isn't mounted in this model.

7-5. SCHEMATIC DIAGRAM – LEAF SW Section –



- Voltages are dc with respect to ground under no-signal conditions.
  no mark : TAPE PLAY
  ( ) : TAPE REC

7-6. PRINTED WIRING BOARD – LEAF SW Section – • See page 13 for Circuit Boards Location.

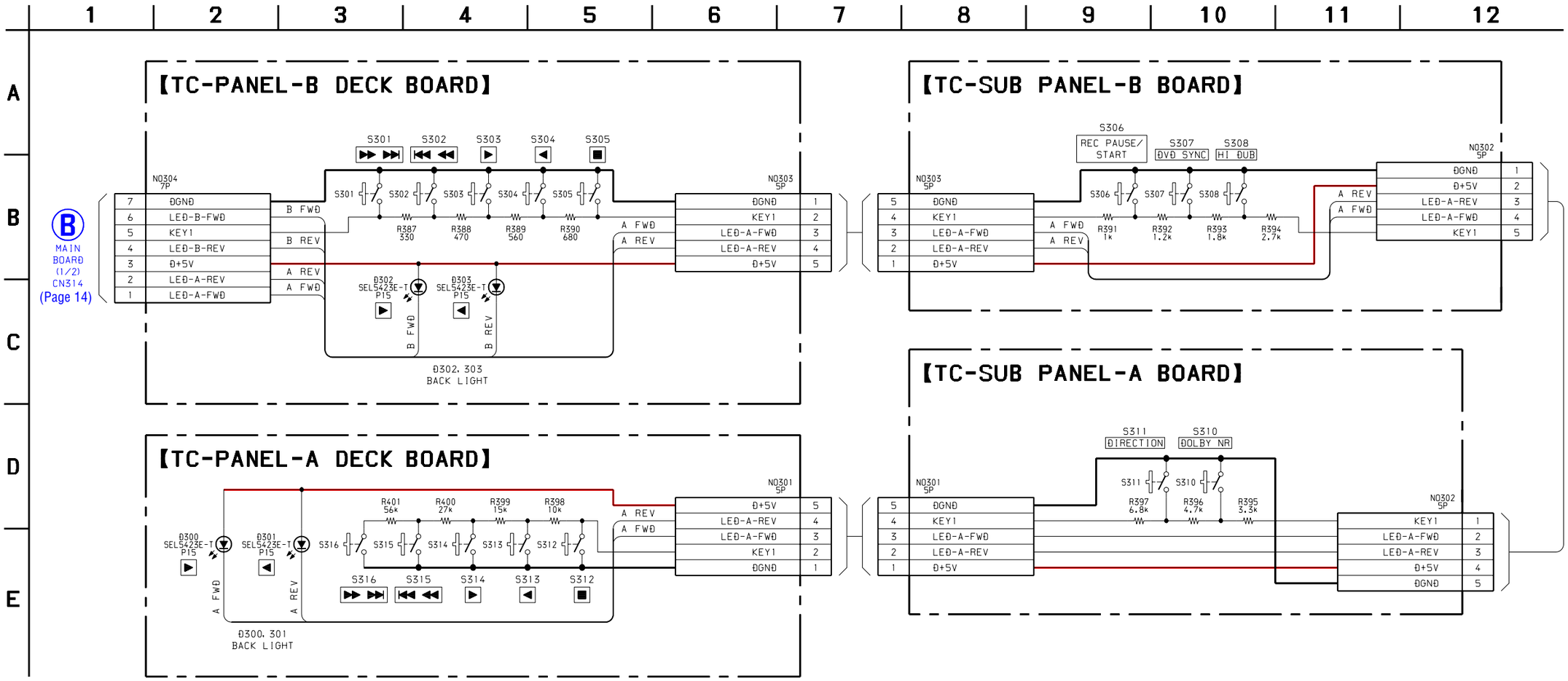


- **Semiconductor Location**

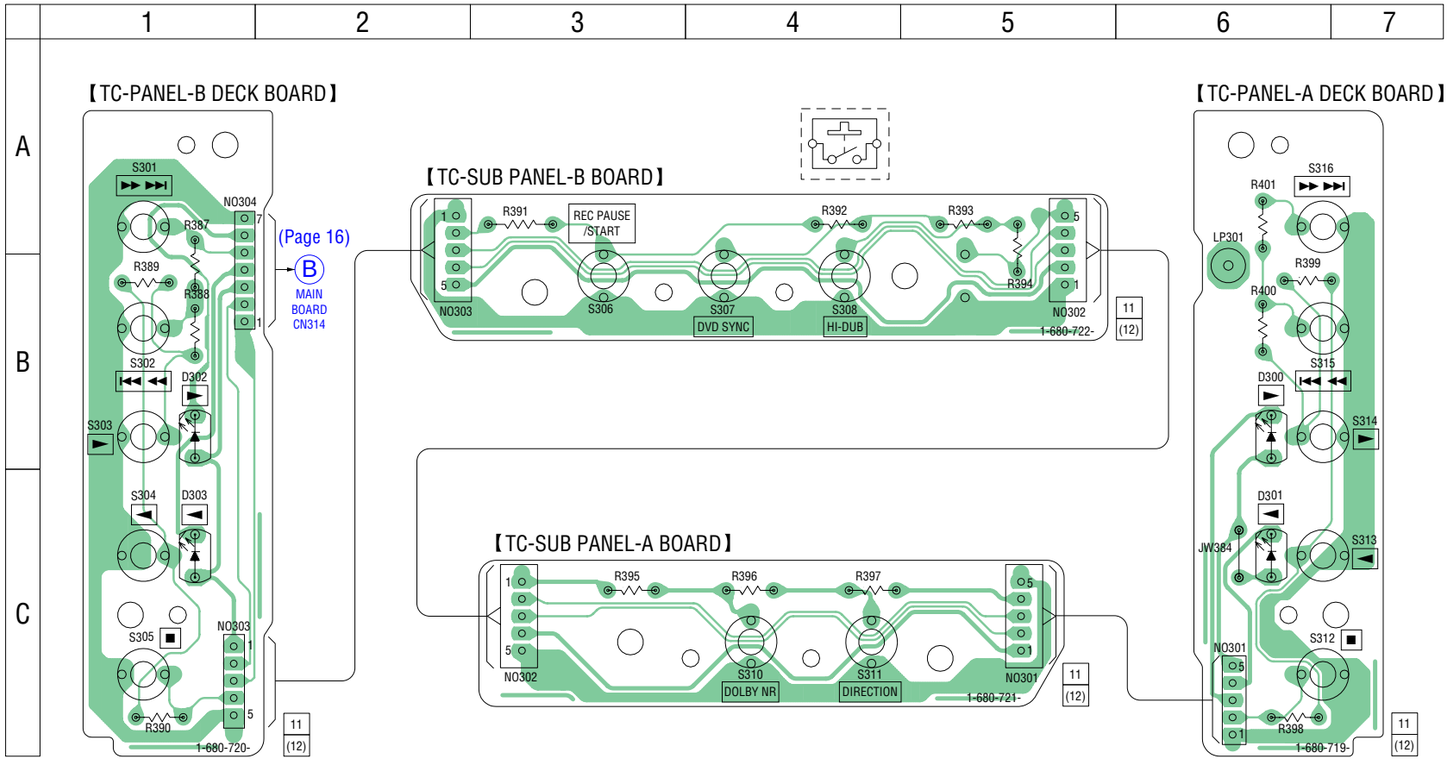
Ref. No.	Location
D1001	B-4
D1002	B-10
IC1001	B-2
IC1002	B-9
Q1001	B-3

There are a few cases that the part printed on this diagram isn't mounted in this model.

7-7. SCHEMATIC DIAGRAM – PANEL Section –



7-8. PRINTED WIRING BOARDS – PANEL Section – • See page 13 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D300	B-6
D301	C-6
D302	B-1
D303	C-1

7-9. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC310 PT8300-S (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	RESET_B	I	Reset signal input terminal Not used
3	CLK	I	Serial data transfer clock signal input from the DVD/ VIDEO CD/ CD player section (DVP-S9)
4	LATCH	I	Serial data latch pulse signal input from the DVD/ VIDEO CD/ CD player section (DVP-S9)
5 to 8	P15 to P12	I	Not used (fixed at “L”)
9	P11	I	AMS signal input terminal “L”: AMS in
10	P10	I	Detection input from the deck-A half detect switch “H”: cassette in, “L”: no cassette
11	P9	I	Detection input from the deck-B play detect switch “H”: deck-B play
12	P8	I	Detection input from the deck-A play detect switch “H”: deck-A play
13	LATCHO	O	Serial data latch pulse output to the PT8300-S (IC311)
14	CLKO	O	Serial data transfer clock signal output to the PT8300-S (IC311)
15	DO1	O	Serial data output to the PT8300-S (IC311)
16	DI2	I	Serial data input from the PT8300-S (IC311)
17	P7	O	Tape deck relay on/off control signal output to the µPC1330H (IC302)
18	P6	O	ALC on/off control signal output to the HA12226F (IC301)
19	P5	O	Deck-A/B selection signal output to the HA12226F (IC301)
20	P4	O	EQ high/normal selection signal output to the HA12226F (IC301)
21	P3	O	Recording bias on/off control signal output to the HA12226F (IC301)
22	P2	O	Recording muting on/off control signal output to the HA12226F (IC301)
23	P1	O	Dolby NR on/off selection signal output to the HA12226F (IC301)
24	P0	O	Tape deck line muting on/off control output to the HA12226F (IC301)
25	DO2	O	Serial data output to the DVD/ VIDEO CD/ CD player section (DVP-S9)
26	DI1	I	Serial data input from the DVD/ VIDEO CD/ CD player section (DVP-S9)
27	PULLUP	I	P8 to P15 Control pin for pull-up resisitor (fixed at “L”)
28	VCC	—	Power supply terminal (+5V)

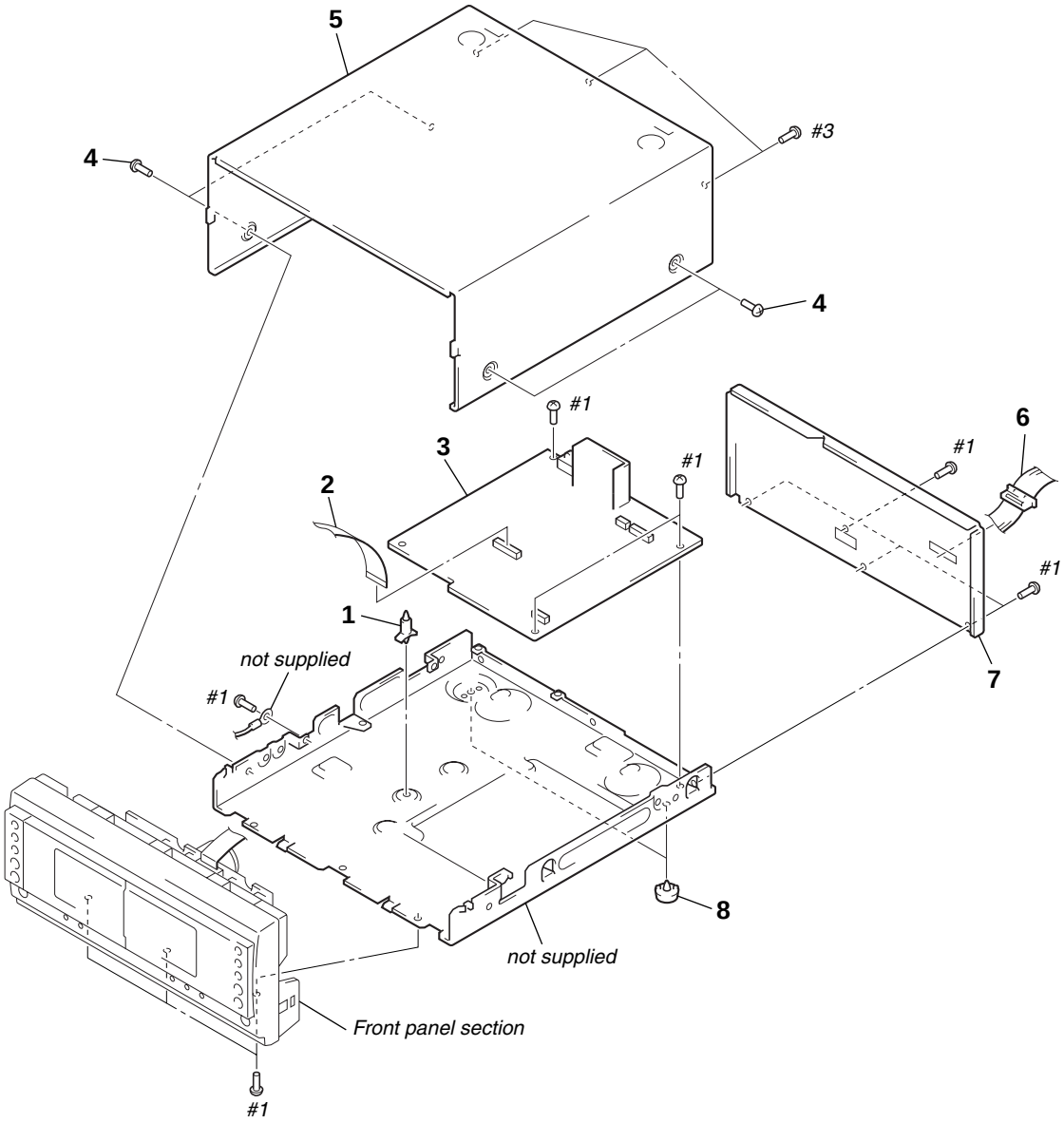
• **MAIN BOARD IC311 PT8300-S (LED DRIVE, MOTOR DRIVER)**

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	RESET_B	I	Reset signal input terminal Nor used
3	CLK	I	Serial data transfer clock signal input from the PT8300-S (IC310)
4	LATCH	I	Serial data latch pulse input from the PT8300-S (IC310)
5	P15	O	Not used (connected to pin ⑥)
6	P14	O	LED drive signal output of the B-FWD indicator (D302) "L": LED on
7	P13	O	Not used (connected to pin ⑧)
8	P12	O	LED drive signal output of the B-REV indicator (D303) "L": LED on
9	P11	O	Not used (connected to pin ⑩)
10	P10	O	LED drive signal output of the A-REV indicator (D301) "L": LED on
11	P9	O	Not used (connected to pin ⑫)
12	P8	O	LED drive signal output of the A-FWD indicator (D300) "L": LED on
13	LATCHO	O	Not used (open)
14	CLKO	O	Not used (open)
15	DO1	O	Not used (open)
16	DI2	I	Not used (fixed at "L")
17 to 21	P7 to P3	O	Not used (open)
22	P2	O	Not used (connected to pin ㉓)
23	P1	O	Capstan motor on/off control signal output terminal "H": motor on
24	P0	O	High/normal speed selection signal output of the capstan motor "H": normal speed, "L": high speed
25	DO2	O	Serial data output to the PT8300-S (IC310)
26	DI1	I	Serial data input from the PT8300-S (IC310)
27	PULLUP	I	P8 to P15 Control pin for Pull-up resistor (fixed at "L")
28	VCC	—	Power supply terminal (+5V)

SECTION 8
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

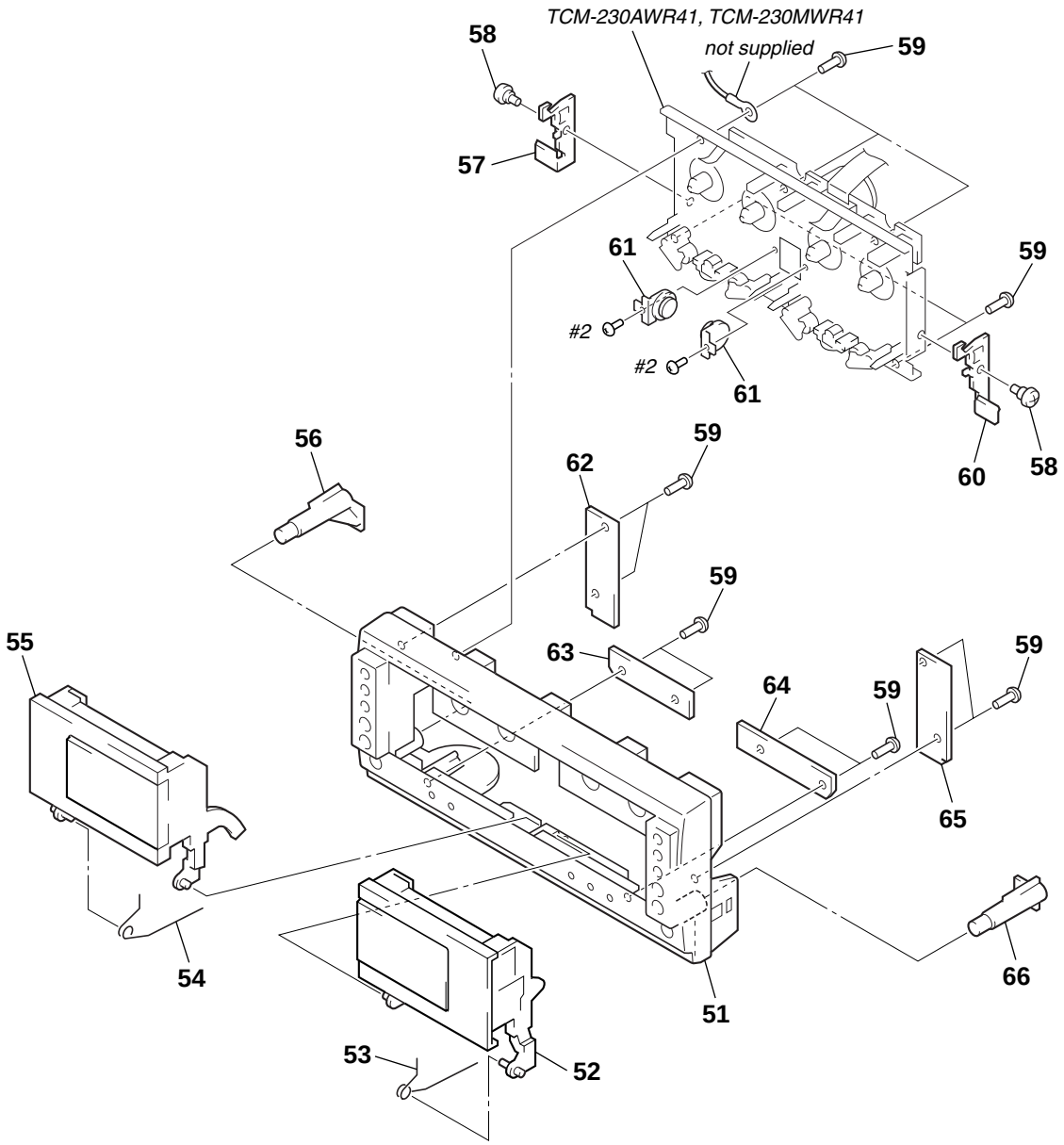
8-1. GENERAL SECTION



Ref. No.	Part No.	Description	Remark
* 1	4-924-098-01	HOLDER, PC BOARD	
2	1-773-048-11	WIRE (FLAT TYPE) (17 CORE)	
3	A-2007-873-A	MAIN BOARD, COMPLETE (EXCEPT TH)	
3	A-4725-734-A	MAIN BOARD, COMPLETE (TH)	
4	3-363-099-21	SCREW (CASE 3 TP2)	
5	4-232-336-31	CASE	
6	1-757-632-11	CORD (WITH CONNECTOR) 15P	

Ref. No.	Part No.	Description	Remark
7	4-236-839-01	PANEL (TC), BACK (AEP, UK)	
7	4-236-839-11	PANEL (TC), BACK (AUS, EA, KR)	
7	4-236-839-21	PANEL (TC), BACK (E, SP)	
7	4-236-839-31	PANEL (TC), BACK (MX)	
7	4-236-839-41	PANEL (TC), BACK (TH)	
8	4-965-822-01	FOOT	

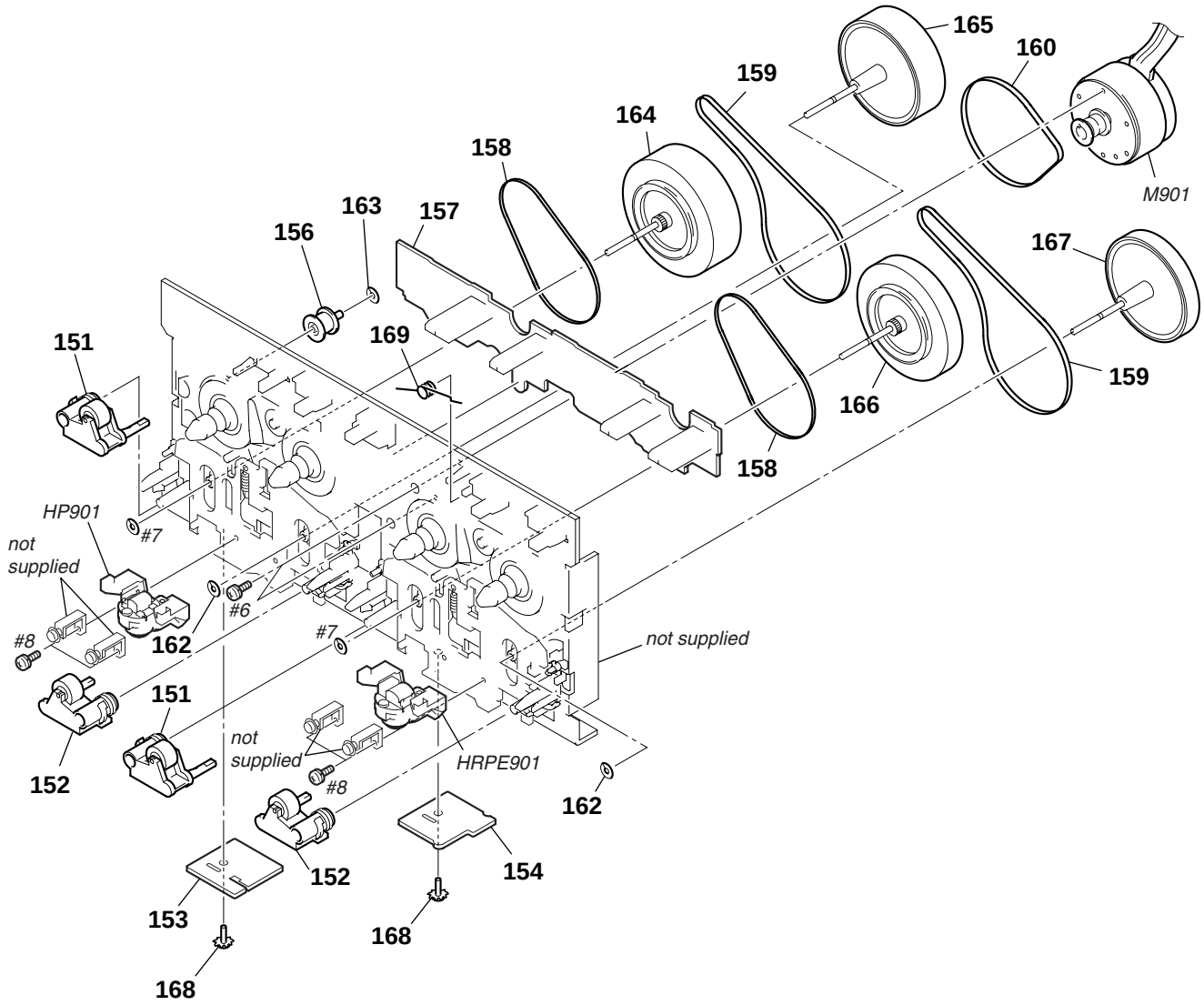
8-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4953-609-1	PANEL ASSY, FRONT		59	4-951-620-01	SCREW (2.6X8), +BVTP	
52	X-4953-606-1	HOLDER (R) ASSY, CASSETTE		60	4-900-889-01	EJECT (LEVER-R)	
53	4-233-091-01	SPRING (R), TORSION		61	4-215-062-01	DAMPER	
54	4-233-090-01	SPRING (L), TORSION		62	1-680-719-11	TC-PANEL-A DECK BOARD	
55	X-4953-605-1	HOLDER (L) ASSY, CASSETTE		63	1-680-721-11	TC-SUB PANEL-A BOARD	
56	4-233-094-01	EJECT (L), BUTTON		64	1-680-722-11	TC-SUB PANEL-B BOARD	
57	4-900-888-01	EJECT (LEVER-L)		65	1-680-720-11	TC-PANEL-B DECK BOARD	
58	3-019-456-11	SCREW, STEP		66	4-233-095-01	EJECT (R), BUTTON	

8-3. TAPE MECHANISM DECK SECTION (TCM-230AWR41)

NOTE: Two types of tape mechanism deck are used for this model.
Refer to "TAPE MECHANISM DECK DISCRIMINATION" on page 3.

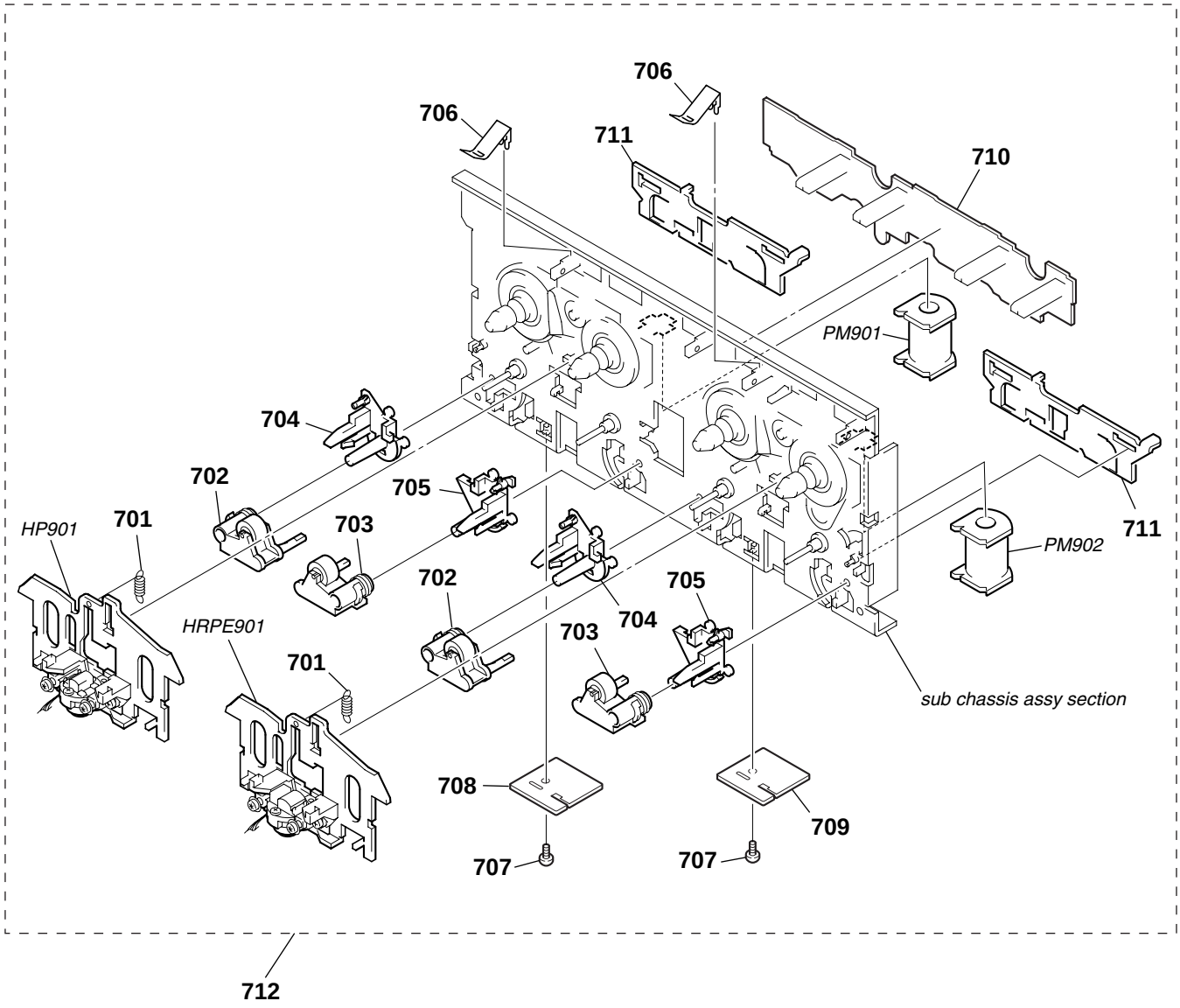


Ref. No.	Part No.	Description	Remark
151	X-3374-156-4	PINCH LEVER (REV) ASSY	
152	X-3374-155-4	PINCH LEVER (FWD) ASSY	
153	A-2007-839-A	HEAD (A) BOARD, COMPLETE	
154	A-2007-840-A	HEAD (B) BOARD, COMPLETE	
156	3-040-580-02	PULLEY (TENSION)	
157	A-2007-838-A	LEAF SW BOARD, COMPLETE	
158	3-041-947-01	BELT (FR)	
159	3-041-946-01	BELT (CAPSTAN B)	
160	4-227-239-01	BELT (CAPSTAN C)	
162	3-019-208-01	WASHER, STOPPER	
163	3-016-533-01	WASHER (FR), STOPPER	

Ref. No.	Part No.	Description	Remark
164	X-3378-041-1	FLYWHEEL (A-REV) ASSY	
165	X-3378-040-1	FLYWHEEL (A-FWD) ASSY	
166	X-3378-043-1	FLYWHEEL (B-REV) ASSY	
167	X-3378-042-1	FLYWHEEL (B-FWD) ASSY	
168	4-227-872-11	SCREW (+PTT 2X4), GROUND POINT	
169	4-227-455-02	SPING (HALF), TORSION	
HP901	X-4953-985-1	BLOCK (A) ASSY, HEAD (PB)	(for TCM-230AWR41)
HRPE901	X-4953-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE)	(for TCM-230AWR41)
M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY) (CAPSTAN)	

8-4. TAPE MECHANISM DECK SECTION (TCM-230MWR41)

NOTE: Two types of tape mechanism deck are used for this model.
Refer to "TAPE MECHANISM DECK DISCRIMINATION" on page 3.

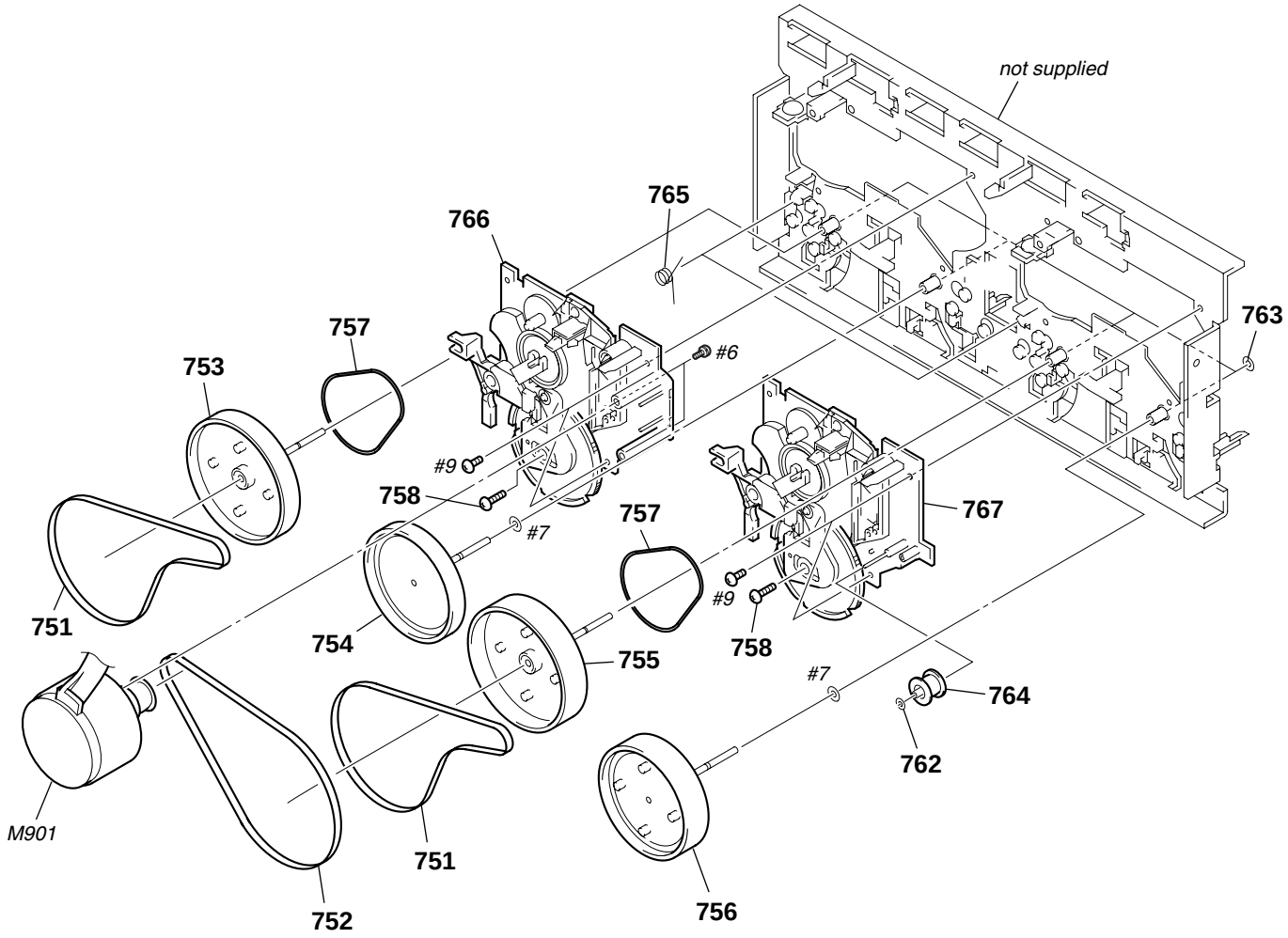


Ref. No.	Part No.	Description	Remark
701	3-016-574-11	SPRING (HEAD), TENSION	
702	3-016-565-01	BASE (PINCH LEVER REV)	
703	3-016-564-01	BASE (PINCH LEVER FWD)	
704	X-3374-156-5	PINCH LEVER (REV) ASSY	
705	X-3374-155-5	PINCH LEVER (FWD) ASSY	
706	4-229-083-01	SPRING (CASSETTE), LEAF	
707	4-227-872-11	SCREW (+PTT 2X4), GROUND POINT	
708	A-2007-839-A	HEAD (A) BOARD, COMPLETE	
709	A-2007-840-A	HEAD (B) BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
710	A-2007-838-A	LEAF SW BOARD, COMPLETE	
711	3-016-566-01	SLIDER, REVERSE	
712	A-2100-932-A	TAPE MECHANISM DECK (TCM-230MWR41)	
HP901	A-2004-771-A	BASE (A) ASSY, HEAD (PB) (for TCM-230MWR41)	
HRPE901	A-2004-772-A	BASE (B) ASSY, HEAD (REC/PB/ERASE) (for TCM-230MWR41)	
PM901	1-454-887-32	SOLENOID, PLUNGER (for TCM-230MWR41)	
PM902	1-454-887-32	SOLENOID, PLUNGER (for TCM-230MWR41)	

8-5. SUB CHASSIS ASSY SECTION (TCM-230MWR41)

NOTE: Two types of tape mechanism deck are used for this model.
Refer to "TAPE MECHANISM DECK DISCRIMINATION" on page 3.



Ref. No.	Part No.	Description	Remark
751	3-041-946-01	BELT (CAPSTAN B)	
752	4-227-239-01	BELT (CAPSTAN C)	
753	X-3378-042-1	FLYWHEEL (B-FWD) ASSY	
754	X-3378-043-1	FLYWHEEL (B-REV) ASSY	
755	X-3378-040-1	FLYWHEEL (A-FWD) ASSY	
756	X-3378-041-1	FLYWHEEL (A-REV) ASSY	
757	3-041-947-01	BELT (FR)	
758	4-231-273-01	SCREW (2X7) +PTT	

Ref. No.	Part No.	Description	Remark
762	3-016-532-01	WASHER (FR LEVER), STOPPER	
763	3-019-208-01	WASHER, STOPPER	
764	3-040-580-02	PULLEY (TENSION)	
765	4-228-450-11	SPRING (REVERSE SLIDER), TORSION	
766	A-2004-794-A	CHASSIS (B) ASSY, SUB	
767	A-2004-793-A	CHASSIS (A) ASSY, SUB	
M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY) (CAPSTAN)	

HEAD (A) | HEAD (B) | LEAF SW | MAIN

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  TH : Thai model
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-2007-839-A	HEAD (A) BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN1	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
**********					
	A-2007-840-A	HEAD (B) BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN2	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P			
**********					
	A-2007-838-A	LEAF SW BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1001	1-107-716-11	ELECT	33uF	20%	10V
		< CONNECTOR >			
CN1001	1-568-860-21	SOCKET, CONNECTOR 17P			
		< DIODE >			
D1001	8-719-911-19	DIODE 1SS133T-72			
D1002	8-719-911-19	DIODE 1SS133T-72			
		< PHOTO INTERRUPTER >			
IC1001	8-749-014-38	PHOTO INTERRUPTER SG-264			
IC1002	8-749-014-38	PHOTO INTERRUPTER SG-264			
		< TRANSISTOR >			
Q1001	8-729-029-56	TRANSISTOR	DTA144ESA-TP		
		< RESISTOR >			
R907	1-247-879-11	CARBON	100K	5%	1/4W
R1001	1-249-409-11	CARBON	220	5%	1/4W
R1002	1-249-409-11	CARBON	220	5%	1/4W
R1003	1-249-414-11	CARBON	560	5%	1/4W
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W
R1005	1-247-818-11	CARBON	300	5%	1/4W
R1006	1-247-864-11	CARBON	24K	5%	1/4W
R1007	1-247-780-00	CARBON	7.5	5%	1/4W
R1008	1-249-417-11	CARBON	1K	5%	1/4W
		< VARIABLE RESISTOR >			
RV1001	1-241-785-11	RES, ADJ, CARBON 10K			
RV1002	1-241-785-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S1001	1-570-953-11	SWITCH, PUSH (1 KEY) (A PLAY)			
S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (B PLAY)			
S1003	1-771-333-11	SWITCH, LEAF (A.HALF)			
S1004	1-771-205-11	SWITCH, LEAF (A.$\overline{120}$/70)			
S1005	1-771-205-11	SWITCH, LEAF (REC.A)			
S1006	1-771-333-11	SWITCH, LEAF (B.HALF)			
S1008	1-771-205-11	SWITCH, LEAF (B.$\overline{120}$/70)			
S1009	1-771-205-11	SWITCH, LEAF (REC.B)			
**********					
	A-2007-873-A	MAIN BOARD, COMPLETE (EXCEPT TH)			
	A-4725-734-A	MAIN BOARD, COMPLETE (TH)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C301	1-126-960-11	ELECT	1uF	20%	50V
C302	1-130-479-00	MYLAR	0.0047uF	5%	50V
C303	1-136-165-00	FILM	0.1uF	5%	50V
C304	1-136-165-00	FILM	0.1uF	5%	50V
C305	1-126-959-11	ELECT	0.47uF	20%	50V
C306	1-126-960-11	ELECT	1uF	20%	50V
C307	1-126-960-11	ELECT	1uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-137-194-11	FILM	0.47uF	5%	50V
C310	1-162-290-31	CERAMIC	470PF	10%	50V
C311	1-126-964-11	ELECT	10uF	20%	50V
C312	1-126-959-11	ELECT	0.47uF	20%	50V
C313	1-162-294-31	CERAMIC	0.001uF	10%	50V
C314	1-126-964-11	ELECT	10uF	20%	50V
C315	1-126-963-11	ELECT	4.7uF	20%	50V
C316	1-126-933-11	ELECT	100uF	20%	16V
C317	1-104-665-11	ELECT	100uF	20%	10V
C318	1-126-964-11	ELECT	10uF	20%	50V
C319	1-126-961-11	ELECT	2.2uF	20%	50V
C320	1-126-961-11	ELECT	2.2uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C321	1-162-289-31	CERAMIC	390PF	10%	50V
C322	1-162-282-31	CERAMIC	100PF	10%	50V
C323	1-136-157-00	FILM	0.022uF	5%	50V
C324	1-126-933-11	ELECT	100uF	20%	16V
C326	1-162-289-31	CERAMIC	390PF	10%	50V
C327	1-104-665-11	ELECT	100uF	20%	10V
C328	1-162-282-31	CERAMIC	100PF	10%	50V
C329	1-136-153-00	FILM	0.01uF	5%	50V
C330	1-126-933-11	ELECT	100uF	20%	16V
C332	1-162-283-31	CERAMIC	120PF	10%	50V
C333	1-162-288-31	CERAMIC	330PF	10%	50V
C334	1-162-209-31	CERAMIC	27PF	5%	50V
C335	1-137-150-11	MYLAR	0.01uF	5%	100V
C336	1-126-961-11	ELECT	2.2uF	20%	50V
C337	1-136-155-00	FILM	0.015uF	5%	50V
C338	1-130-481-00	MYLAR	0.0068uF	5%	50V
C339	1-130-481-00	MYLAR	0.0068uF	5%	50V
C340	1-136-156-00	FILM	0.018uF	5%	50V
C341	1-126-960-11	ELECT	1uF	20%	50V
C342	1-104-660-11	ELECT	47uF	20%	16V
C343	1-164-159-11	CERAMIC	0.1uF		50V
C344	1-164-159-11	CERAMIC	0.1uF		50V
C345	1-164-159-11	CERAMIC	0.1uF		50V
C346	1-164-159-11	CERAMIC	0.1uF		50V
C347	1-126-964-11	ELECT	10uF	20%	50V
C348	1-164-159-11	CERAMIC	0.1uF		50V
C349	1-126-964-11	ELECT	10uF	20%	50V
C350	1-126-964-11	ELECT	10uF	20%	50V
C351	1-126-960-11	ELECT	1uF	20%	50V
C352	1-130-479-00	MYLAR	0.0047uF	5%	50V
C353	1-136-165-00	FILM	0.1uF	5%	50V
C354	1-136-165-00	FILM	0.1uF	5%	50V
C355	1-126-959-11	ELECT	0.47uF	20%	50V
C356	1-126-960-11	ELECT	1uF	20%	50V
C357	1-126-960-11	ELECT	1uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V
C359	1-137-194-11	FILM	0.47uF	5%	50V
C360	1-162-290-31	CERAMIC	470PF	10%	50V
C362	1-130-479-00	MYLAR	0.0047uF	5%	50V
C363	1-130-479-00	MYLAR	0.0047uF	5%	50V
C367	1-162-294-31	CERAMIC	0.001uF	10%	50V
C368	1-126-964-11	ELECT	10uF	20%	50V
C369	1-126-961-11	ELECT	2.2uF	20%	50V
C370	1-126-961-11	ELECT	2.2uF	20%	50V
C371	1-162-289-31	CERAMIC	390PF	10%	50V
C372	1-162-282-31	CERAMIC	100PF	10%	50V
C373	1-136-157-00	FILM	0.022uF	5%	50V
C374	1-126-933-11	ELECT	100uF	20%	16V
C376	1-162-289-31	CERAMIC	390PF	10%	50V
C377	1-104-665-11	ELECT	100uF	20%	10V
C378	1-162-282-31	CERAMIC	100PF	10%	50V
C379	1-136-153-00	FILM	0.01uF	5%	50V
C380	1-126-933-11	ELECT	100uF	20%	16V
C382	1-162-283-31	CERAMIC	120PF	10%	50V
C383	1-162-288-31	CERAMIC	330PF	10%	50V
C384	1-162-209-31	CERAMIC	27PF	5%	50V
C385	1-104-665-11	ELECT	100uF	20%	10V
C386	1-104-665-11	ELECT	100uF	20%	10V
C388	1-126-964-11	ELECT	10uF	20%	50V
C389	1-126-935-11	ELECT	470uF	20%	16V
C390	1-126-964-11	ELECT	10uF	20%	50V
C391	1-126-935-11	ELECT	470uF	20%	16V
C394	1-126-964-11	ELECT	10uF	20%	50V
C395	1-126-964-11	ELECT	10uF	20%	50V
C396	1-162-282-31	CERAMIC	100PF	10%	50V
C397	1-162-282-31	CERAMIC	100PF	10%	50V
C398	1-162-282-31	CERAMIC	100PF	10%	50V
C399	1-162-282-31	CERAMIC	100PF	10%	50V
C414	1-126-964-11	ELECT	10uF	20%	50V
C415	1-126-935-11	ELECT	470uF	20%	10V
C417	1-164-159-11	CERAMIC	0.1uF		50V
C418	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

*	CN308	1-566-856-11	SOCKET, CONNECTOR 5P	
			(SYSTEM CONTROL 4 FROM ST-S9)	
	CN309	1-794-569-11	PIN, CONNECTOR 5P	
	CN310	1-580-176-11	PIN, CONNECTOR 10P	
	CN311	1-784-778-11	CONNECTOR, FFC 17P	
*	CN314	1-568-934-11	PIN, CONNECTOR 7P	

< DIODE >

D306	8-719-024-99	DIODE	11ES2-NTA2B (EXCEPT TH)
D306	8-719-200-82	DIODE	11ES2-NTA1B (TH)
D307	8-719-024-99	DIODE	11ES2-NTA2B (EXCEPT TH)
D307	8-719-200-82	DIODE	11ES2-NTA1B (TH)
D308	8-719-024-99	DIODE	11ES2-NTA2B (EXCEPT TH)
D308	8-719-200-82	DIODE	11ES2-NTA1B (TH)
D309	8-719-024-99	DIODE	11ES2-NTA2B (EXCEPT TH)
D309	8-719-200-82	DIODE	11ES2-NTA1B (TH)

< GROUND TERMINAL>

*	EPT300	1-537-738-21	TERMINAL, EARTH
*	EPT302	1-537-738-21	TERMINAL, EARTH

< IC >

IC301	8-759-652-02	IC	HA12226F
IC302	8-759-143-54	IC	uPC1330HA
IC303	8-759-710-59	IC	NJM4580D-D
IC304	8-759-710-59	IC	NJM4580D-D
IC310	6-800-467-01	IC	PT8300-S
IC311	6-800-467-01	IC	PT8300-S
IC320	8-759-394-35	IC	BA12T
IC321	8-759-701-59	IC	NJM7809FA

< COIL >

L301	1-410-780-11	INDUCTOR	27uH
L302	1-414-193-41	INDUCTOR	220uH
L303	1-414-193-41	INDUCTOR	220uH
L351	1-410-780-11	INDUCTOR	27uH

< TRANSISTOR >

Q301	8-729-801-93	TRANSISTOR	2SD1387-34-TP
Q302	8-729-142-46	TRANSISTOR	2SC2001TP-LK
Q303	8-729-142-46	TRANSISTOR	2SC2001TP-LK

MAIN

Ref. No.	Part No.	Description			Remark
Q304	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q305	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q310	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q391	8-729-140-04	TRANSISTOR	2SB1116-TP-LK		
Q392	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q393	8-729-140-04	TRANSISTOR	2SB1116-TP-LK		
Q394	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q395	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q396	8-729-801-93	TRANSISTOR	2SD1387-34-TP		
Q400	8-729-142-46	TRANSISTOR	2SC2001TP-LK		
		< RESISTOR >			
R300	1-249-433-11	CARBON	22K	5% 1/4W	
R301	1-249-421-11	CARBON	2.2K	5% 1/4W	
R302	1-247-807-31	CARBON	100	5% 1/4W	
R303	1-247-807-31	CARBON	100	5% 1/4W	
R304	1-249-427-11	CARBON	6.8K	5% 1/4W	
R305	1-249-429-11	CARBON	10K	5% 1/4W	
R306	1-249-430-11	CARBON	12K	5% 1/4W	
R307	1-247-843-11	CARBON	3.3K	5% 1/4W	
R308	1-249-433-11	CARBON	22K	5% 1/4W	
R309	1-247-903-00	CARBON	1M	5% 1/4W	
R310	1-247-884-11	CARBON	160K	5% 1/4W	
R311	1-249-441-11	CARBON	100K	5% 1/4W	
R313	1-249-429-11	CARBON	10K	5% 1/4W	
R314	1-249-435-11	CARBON	33K	5% 1/4W	
R315	1-249-429-11	CARBON	10K	5% 1/4W	
R316	1-249-429-11	CARBON	10K	5% 1/4W	
R317	1-247-893-11	CARBON	390K	5% 1/4W	
R318	1-249-418-11	CARBON	1.2K	5% 1/4W	
R319	1-249-425-11	CARBON	4.7K	5% 1/4W	
R321	1-249-430-11	CARBON	12K	5% 1/4W	
R322	1-249-437-11	CARBON	47K	5% 1/4W	
R323	1-249-425-11	CARBON	4.7K	5% 1/4W	
R324	1-249-429-11	CARBON	10K	5% 1/4W	
R325	1-249-437-11	CARBON	47K	5% 1/4W	
R327	1-249-425-11	CARBON	4.7K	5% 1/4W	
R328	1-249-437-11	CARBON	47K	5% 1/4W	
R330	1-247-881-00	CARBON	120K	5% 1/4W	
R331	1-247-807-31	CARBON	100	5% 1/4W	
R332	1-249-426-11	CARBON	5.6K	5% 1/4W	
R333	1-247-882-11	CARBON	130K	5% 1/4W	
R334	1-249-409-11	CARBON	220	5% 1/4W	
R335	1-247-881-00	CARBON	120K	5% 1/4W	
R336	1-249-409-11	CARBON	220	5% 1/4W	
R337	1-249-433-11	CARBON	22K	5% 1/4W	
R338	1-249-430-11	CARBON	12K	5% 1/4W	
R339	1-247-889-00	CARBON	270K	5% 1/4W	
R340	1-249-409-11	CARBON	220	5% 1/4W	
R341	1-249-430-11	CARBON	12K	5% 1/4W	
⚠R342	1-212-851-00	FUSIBLE	5.6	5% 1/4W	F
⚠R343	1-212-851-00	FUSIBLE	5.6	5% 1/4W	F
R344	1-249-432-11	CARBON	18K	5% 1/4W	
R345	1-249-432-11	CARBON	18K	5% 1/4W	
R346	1-249-426-11	CARBON	5.6K	5% 1/4W	
R347	1-249-433-11	CARBON	22K	5% 1/4W	
R348	1-249-409-11	CARBON	220	5% 1/4W	

Ref. No.	Part No.	Description			Remark
R349	1-249-425-11	CARBON	4.7K	5% 1/4W	
R350	1-249-433-11	CARBON	22K	5% 1/4W	
R351	1-249-421-11	CARBON	2.2K	5% 1/4W	
R354	1-249-427-11	CARBON	6.8K	5% 1/4W	
R355	1-249-429-11	CARBON	10K	5% 1/4W	
R356	1-249-430-11	CARBON	12K	5% 1/4W	
R357	1-247-843-11	CARBON	3.3K	5% 1/4W	
R358	1-249-435-11	CARBON	33K	5% 1/4W	
R359	1-249-417-11	CARBON	1K	5% 1/4W	
R360	1-249-417-11	CARBON	1K	5% 1/4W	
R361	1-249-417-11	CARBON	1K	5% 1/4W	
R362	1-249-417-11	CARBON	1K	5% 1/4W	
R363	1-249-437-11	CARBON	47K	5% 1/4W	
R364	1-249-417-11	CARBON	1K	5% 1/4W	
R367	1-249-417-11	CARBON	1K	5% 1/4W	
R368	1-249-418-11	CARBON	1.2K	5% 1/4W	
R369	1-249-413-11	CARBON	470	5% 1/4W	
R370	1-247-881-00	CARBON	120K	5% 1/4W	
R371	1-247-807-31	CARBON	100	5% 1/4W	
R372	1-249-426-11	CARBON	5.6K	5% 1/4W	
R373	1-247-882-11	CARBON	130K	5% 1/4W	
R375	1-247-881-00	CARBON	120K	5% 1/4W	
R376	1-249-409-11	CARBON	220	5% 1/4W	
R377	1-249-433-11	CARBON	22K	5% 1/4W	
R378	1-249-430-11	CARBON	12K	5% 1/4W	
R379	1-247-889-00	CARBON	270K	5% 1/4W	
R386	1-249-410-11	CARBON	270	5% 1/4W	
R402	1-249-419-11	CARBON	1.5K	5% 1/4W	
R403	1-249-416-11	CARBON	820	5% 1/4W	
R404	1-249-419-11	CARBON	1.5K	5% 1/4W	
R405	1-249-416-11	CARBON	820	5% 1/4W	
R406	1-247-807-31	CARBON	100	5% 1/4W	
R407	1-247-807-31	CARBON	100	5% 1/4W	
R408	1-247-807-31	CARBON	100	5% 1/4W	
R409	1-247-807-31	CARBON	100	5% 1/4W	
R412	1-247-807-31	CARBON	100	5% 1/4W	
R413	1-247-807-31	CARBON	100	5% 1/4W	
R414	1-247-807-31	CARBON	100	5% 1/4W	
R415	1-247-807-31	CARBON	100	5% 1/4W	
R416	1-247-807-31	CARBON	100	5% 1/4W	
R417	1-247-807-31	CARBON	100	5% 1/4W	
R418	1-249-414-11	CARBON	560	5% 1/4W	
R419	1-249-417-11	CARBON	1K	5% 1/4W	
R420	1-249-409-11	CARBON	220	5% 1/4W	
R421	1-249-409-11	CARBON	220	5% 1/4W	
R422	1-249-409-11	CARBON	220	5% 1/4W	
R423	1-249-409-11	CARBON	220	5% 1/4W	
		< VARIABLE RESISTOR >			
RV301	1-241-764-11	RES, ADJ, CARBON 10K			
RV302	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV303	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV304	1-241-768-11	RES, ADJ, CARBON 220K			
RV351	1-241-764-11	RES, ADJ, CARBON 10K			
RV354	1-241-768-11	RES, ADJ, CARBON 220K			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< TRANSFORMER >			
T301	1-423-980-11	TRANSFORMER, BIAS OSCILLATION			
**********					
	1-680-719-11	TC-PANEL-A DECK BOARD			
		**********			
		< LED >			
D300	8-719-058-03	LED SEL5423E-TP15 (►)			
D301	8-719-058-03	LED SEL5423E-TP15 (◄)			
		< RESISTOR >			
R398	1-249-429-11	CARBON	10K	5%	1/4W
R399	1-249-431-11	CARBON	15K	5%	1/4W
R400	1-249-434-11	CARBON	27K	5%	1/4W
R401	1-249-438-11	CARBON	56K	5%	1/4W
		< SWITCH >			
S312	1-771-410-21	SWITCH, TACTILE (■)			
S313	1-771-410-21	SWITCH, TACTILE (◄)			
S314	1-771-410-21	SWITCH, TACTILE (►)			
S315	1-771-410-21	SWITCH, TACTILE (I◄◄ ◄◄)			
S316	1-771-410-21	SWITCH, TACTILE (►► ►►I)			
**********					
	1-680-720-11	TC-PANEL-B DECK BOARD			
		**********			
		< LED >			
D302	8-719-058-03	LED SEL5423E-TP15 (►)			
D303	8-719-058-03	LED SEL5423E-TP15 (◄)			
		< RESISTOR >			
R387	1-249-411-11	CARBON	330	5%	1/4W
R388	1-249-413-11	CARBON	470	5%	1/4W
R389	1-249-414-11	CARBON	560	5%	1/4W
R390	1-249-415-11	CARBON	680	5%	1/4W
		< SWITCH >			
S301	1-771-410-21	SWITCH, TACTILE (►► ►►I)			
S302	1-771-410-21	SWITCH, TACTILE (I◄◄ ◄◄)			
S303	1-771-410-21	SWITCH, TACTILE (►)			
S304	1-771-410-21	SWITCH, TACTILE (◄)			
S305	1-771-410-21	SWITCH, TACTILE (■)			
**********					
	1-680-721-11	TC-SUB PANEL-A BOARD			
		**********			
		< RESISTOR >			
R395	1-247-843-11	CARBON	3.3K	5%	1/4W
R396	1-249-425-11	CARBON	4.7K	5%	1/4W
R397	1-249-427-11	CARBON	6.8K	5%	1/4W
		< SWITCH >			
S310	1-771-410-21	SWITCH, TACTILE (DOLBY NR)			
S311	1-771-410-21	SWITCH, TACTILE (DIRECTION)			
**********					

Ref. No.	Part No.	Description			Remark
	1-680-722-11	TC-SUB PANEL-B BOARD			
		**********			
		< RESISTOR >			
R391	1-249-417-11	CARBON	1K	5%	1/4W
R392	1-249-418-11	CARBON	1.2K	5%	1/4W
R393	1-249-420-11	CARBON	1.8K	5%	1/4W
R394	1-249-422-11	CARBON	2.7K	5%	1/4W
		< SWITCH >			
S306	1-771-410-21	SWITCH, TACTILE (REC PAUSE/START)			
S307	1-771-410-21	SWITCH, TACTILE (DVD SYNC)			
S308	1-771-410-21	SWITCH, TACTILE (HI-DUB)			
**********					
		MISCELLANEOUS			
		**********			
2	1-773-048-11	WIRE (FLAT TYPE) (17 CORE)			
6	1-757-632-11	CORD (WITH CONNECTOR) 15P			
712	A-2100-932-A	TAPE MECHANISM DECK (TCM-230MWR41)			
HP901	A-2004-771-A	BASE (A) ASSY, HEAD (PB) (for TCM-230MWR41)			
HP901	X-4953-985-1	BLOCK (A) ASSY, HEAD (PB) (for TCM-230AWR41)			
HRPE901	A-2004-772-A	BASE (B) ASSY, HEAD (REC/PB/ERASE) (for TCM-230MWR41)			
HRPE901	X-4953-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE) (for TCM-230AWR41)			
M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY) (CAPSTAN)			
PM901	1-454-887-32	SOLENOID, PLUNGER (for TCM-230MWR41)			
PM902	1-454-887-32	SOLENOID, PLUNGER (for TCM-230MWR41)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
#2	7-685-853-04	SCREW +BVTT 2X6 (S)			
#3	7-685-871-01	SCREW +BVTT 3X6 (S)			
#6	7-628-254-05	SCREW +PS 2.6X5			
#7	7-623-921-01	RING, RETAINING, CAPSTAN			
#8	7-685-783-09	SCREW +PTT 2X6 (S)			
#9	7-685-781-09	SCREW +PTT 2X4 (S)			

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.09	New

ST-S9

SERVICE MANUAL

Ver 1.0 2001.09

AEP Model
UK Model
E Model
Australian Model

ST-S9 is the tuner section in MHC-S9D.

SPECIFICATIONS

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
Pan American model:	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
European and Middle Eastern models:	531 – 1,602 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz
Dimensions (w/h/d)	Approx. 280 x 108 x 340 mm
Mass	Approx. 2.1 kg

Design and specifications are subject to change without notice.

FM STEREO, FM/AM SUPERHETERODYNE TUNER

9-873-283-01
2001I0500-1
© 2001.9

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

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Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

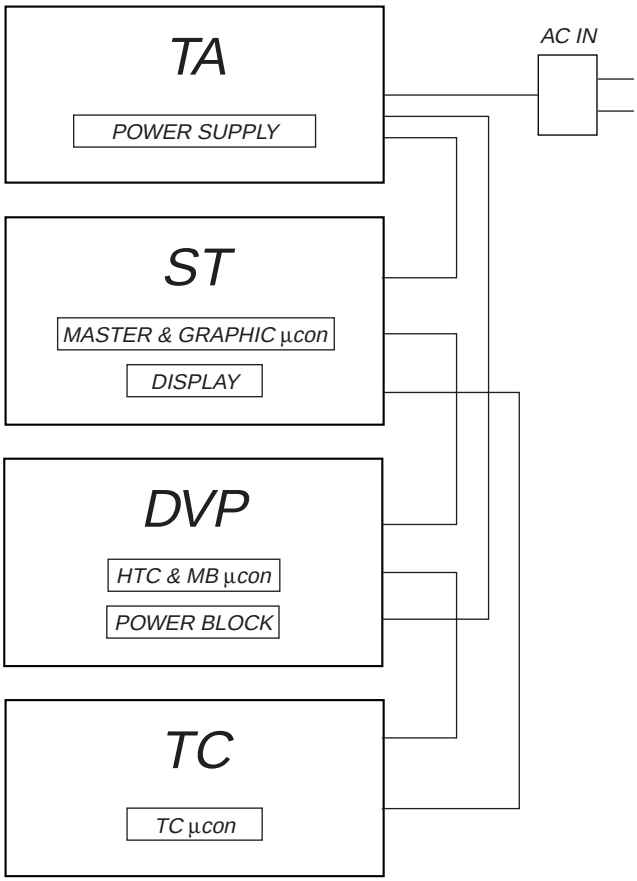
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

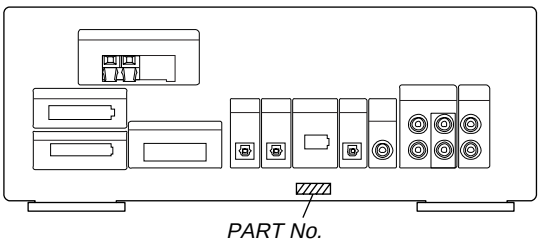
SECTION 1
SERVICING NOTES

This set is a component of the MHC-S9D.
The MHC-S9D system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.
In performing the repair, connect all components with the system cables.
Note: The precaution to the users is described on the label stuck on the back panel (DVD/video CD/CD player) and in the troubleshooting section in the Operation Manual.

System Configuration:



• MODEL IDENTIFICATION
– Rear Panel –



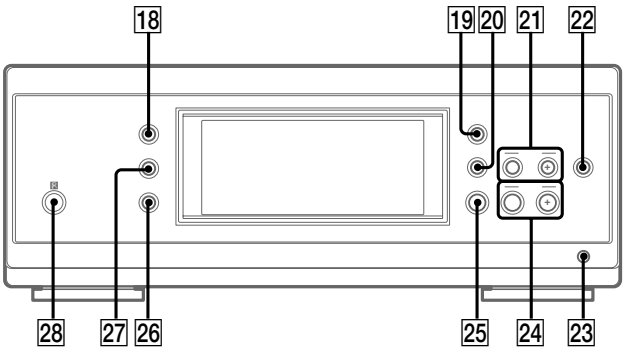
MODEL	PART No.
AEP and UK models	4-232-349-0
Australian model	4-232-349-1
Saudi Arabia model	4-232-349-2
Singapore and E models	4-232-349-3
Mexican model	4-232-349-4
Thai model	4-232-349-5
Korean model	4-232-349-6

SECTION 2
GENERAL

This section is extracted from instruction manual.

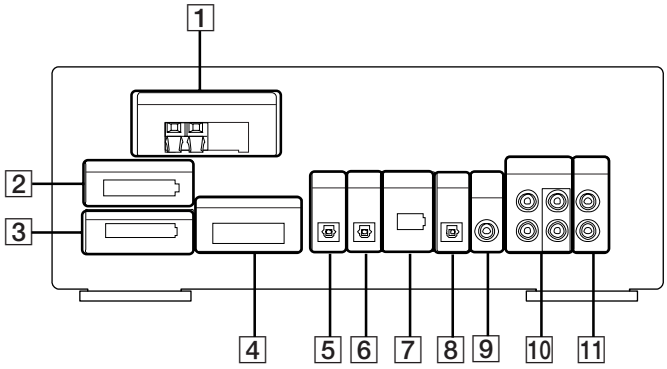
LOCATION OF CONTROLS

– Front Panel –



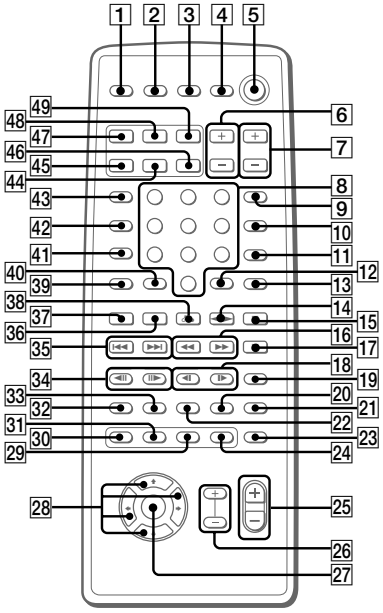
CLOCK/TIMER 27 (17, 47, 56)
DISPLAY 18 (17, 31, 32, 43, 54, 63)
ENTER 22 (42, 43)
IR receptor 28
PRESET /+ 24 (42, 43)
PTY (European model only) 23 (43)
STEREO/MONO 19 (43, 63)
TIMER SELECT 26 (47, 56)
TUNER/BAND 25 (42)
TUNER MEMORY 20 (42)
TUNING /+ 21 (42)

– Rear Panel –



1 ANTENNA terminal
2 SYSTEM CONTROL 1 connector (TO TA-S9D)
3 SYSTEM CONTROL 2 connector (TO TA-S9D)
4 SYSTEM CONTROL 3 connector (FROM DVP-S9)
5 OPTICAL IN terminal
6 OPTICAL IN terminal (FROM DVP-S9)
7 SYSTEM CONTROL 4 connector (TO TC-S9)
8 OPTICAL OUT terminal
9 SUB WOOFER OUT jack
10 MD IN/OUT jack
11 VIDEO (AUDIO) IN jack

Remote control



ANGLE 32 (37)
AUDIO 22 (34)
CLEAR 12 (22, 29, 30, 36)
CLOCK/TIMER SELECT 3 (47, 56)
CLOCK/TIMER SET 2 (17, 47, 56)
DBFB 41 (48)
D.SKIP 9 (26)
DIGITAL 44 (57)
DISPLAY 47 (17, 31, 32, 43, 54)
DVD DISPLAY 23 (18, 19, 30, 32 34, 36 40)
DVD MENU 21 (27)
DVD SET UP 19 (18, 19, 24, 39)
ENTER 27
EQ 31 (52)
EQ ON/OFF 29 (53)
FILE SELECT +/ 26 (48, 49, 53)
FUNCTION 43 (18, 25, 27, 28, 36, 45, 46, 55, 57)
GROOVE 42 (48)
KARAOKE PON (Except for North American and European models) 39 (54)
MD 46 (57)
Numeric buttons 8 (28, 30)
PLAY MODE 11 (25, 28, 29, 46)
REPEAT 10 (30)
RETURN ↶ 13 (27, 39, 40)
SELECT DVD ► 36 (20, 25, 27, 29, 30)
SET UP 24 (14, 16, 51, 53, 54)
SLEEP 1 (55)
SLOW ◄II/II► 18 (26)
SPECTRUM ANALYZER 48 (54)
STEP ◄II/II► 34 (26)
SUBTITLE 33 (37)
SUR 30 (51)
TAPE A ◄► 38 (44)
TAPE B ◄► 14 (44, 45)
TITLE 20 (27)
TUNER/BAND 37 (42)
TV I/⏻ 4 (13)
TV CH +/ 7 (13)
TV/VIDEO 49 (13)
TV VOL +/ 6 (13)
VIDEO 45 (57)
VOL +/ 25

BUTTON DESCRIPTIONS

I/⏻ (power) 5
II (pause) 17
■ (stop) 15
◄◄/►► (rewind/fast forward), TUNING /+ 16
I◄◄ /►►I (go back/go forward), PRESET /+, PREV/NEXT 35
↑/↓/←/→ 28
>10 40

Setting the time

1 **Turn on the system.**

2 **Press CLOCK/TIMER (or CLOCK/TIMER SET on the remote).**
When you set the time for the first time, proceed to step 5.

3 **Press ↑ or ↓ repeatedly to select "CLOCK SET".**

4 **Press ENTER (A/V amplifier or remote).**

5 **Press ↑ or ↓ repeatedly to set the hour.**

6 **Press ENTER (A/V amplifier or remote).**

7 **Press ↑ or ↓ repeatedly to set the minutes.**

8 **Press ENTER (A/V amplifier or remote).**

Tip

If you have made a mistake or want to change the time, start over from step 2.

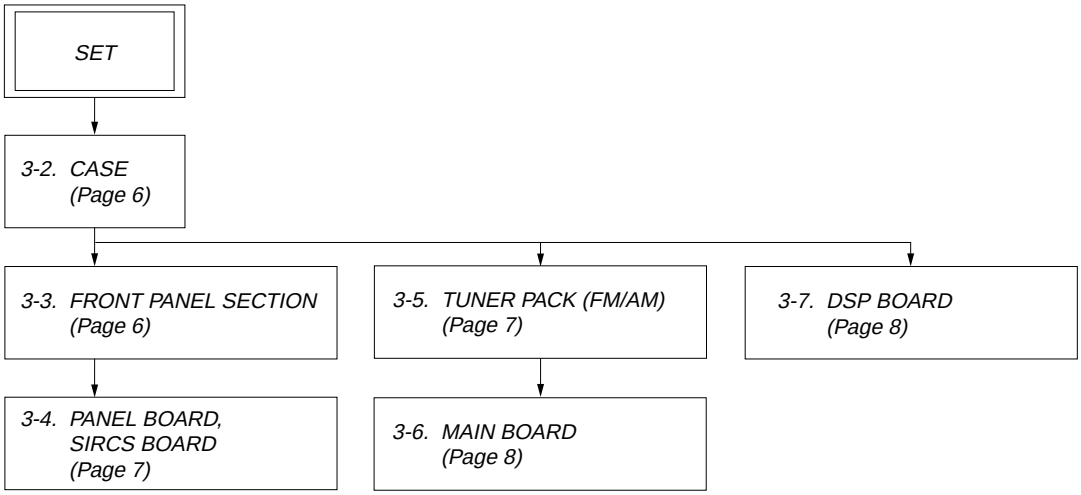
Note

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

SECTION 3
DISASSEMBLY

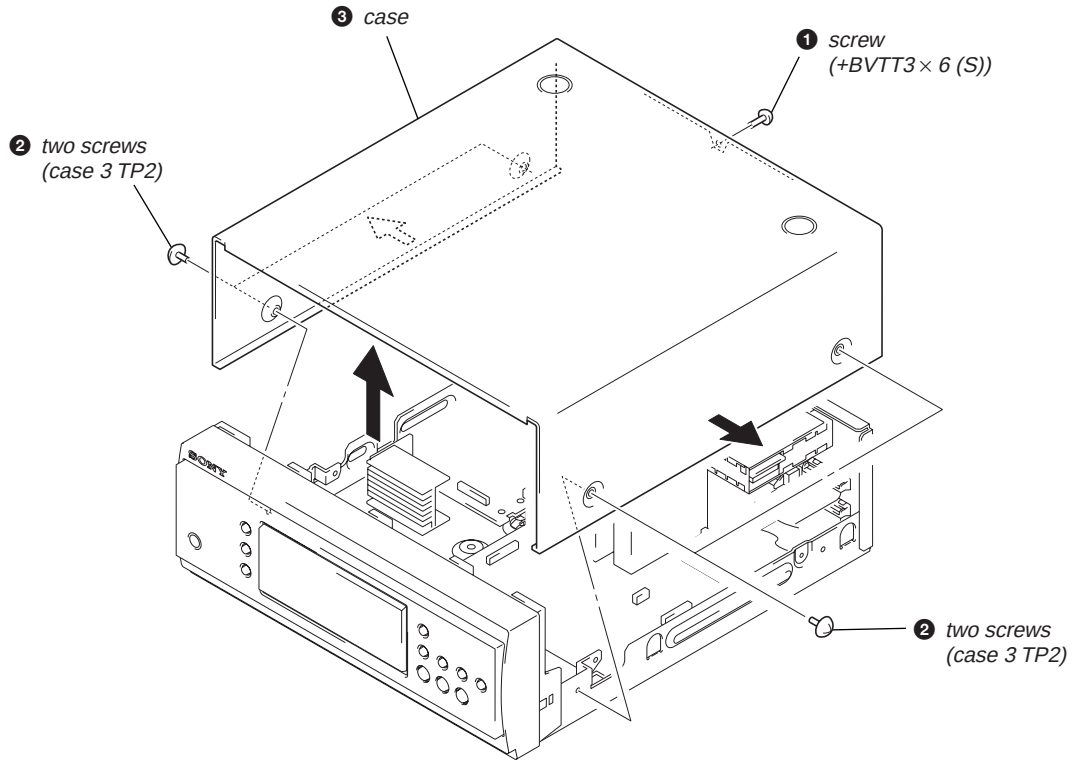
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

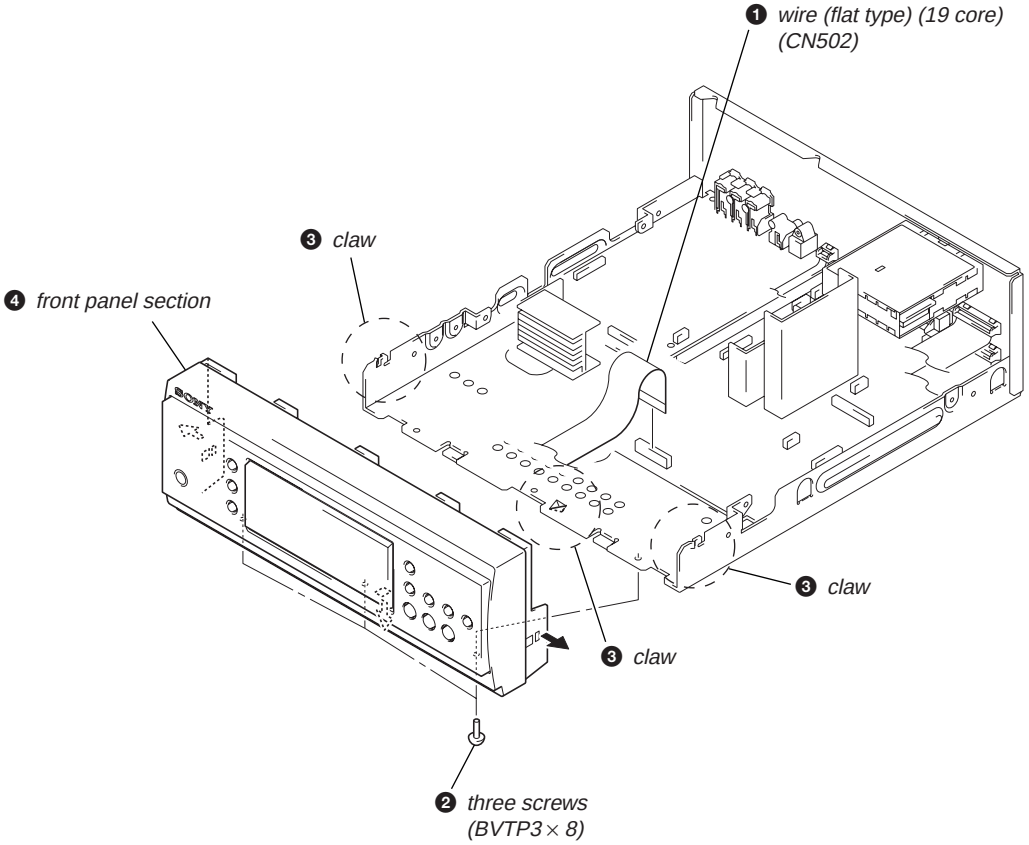


Note: Follow the disassembly procedure in the numerical order given.

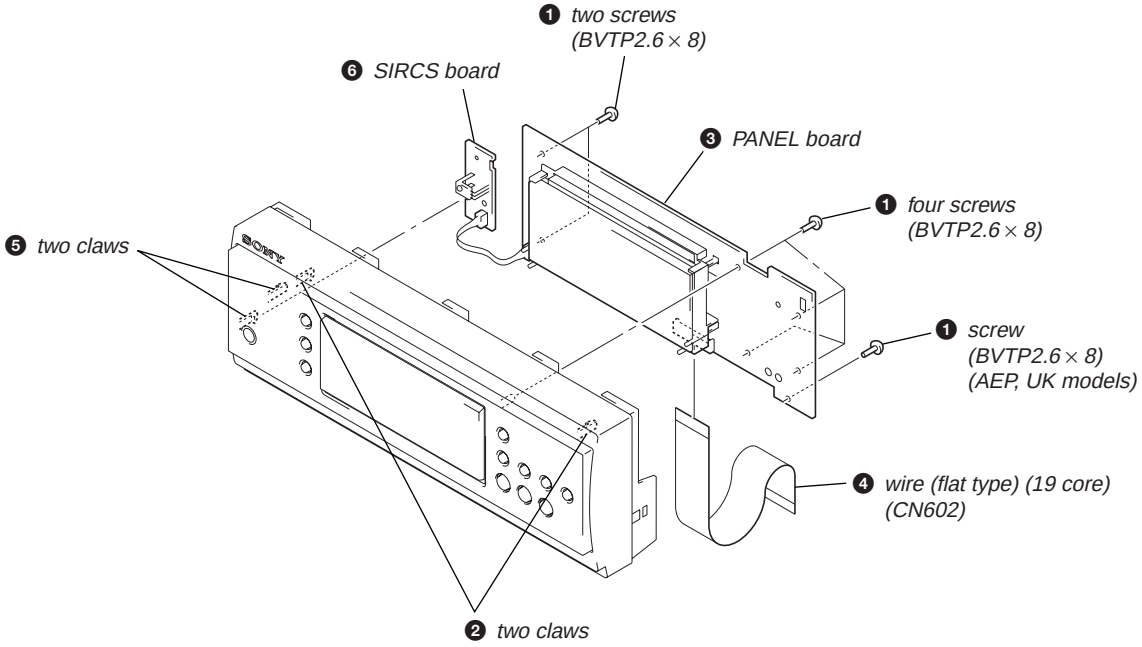
3-2. CASE



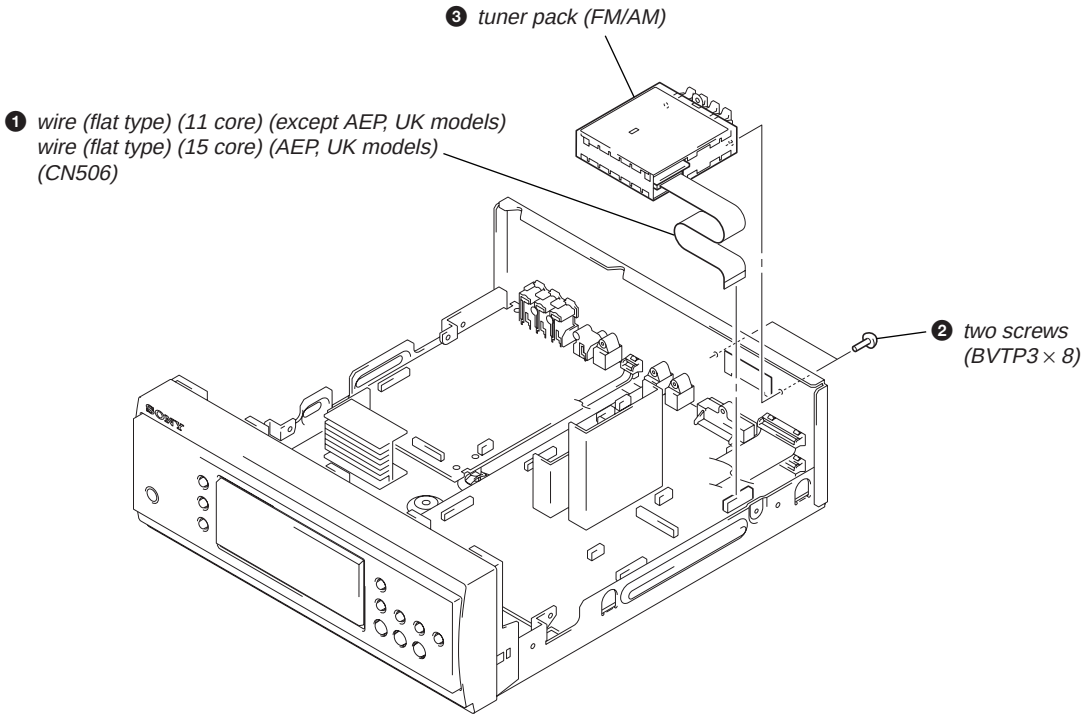
3-3. FRONT PANEL SECTION



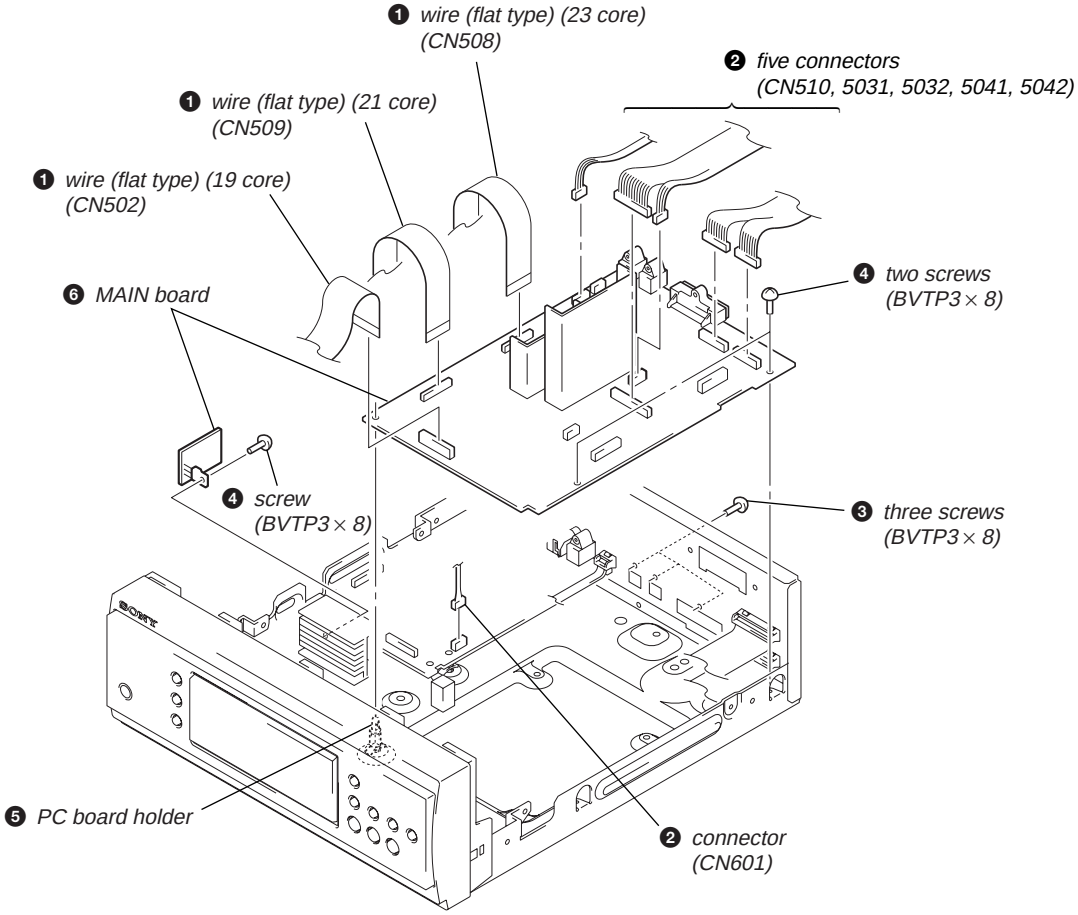
3-4. PANEL BOARD, SIRCS BOARD



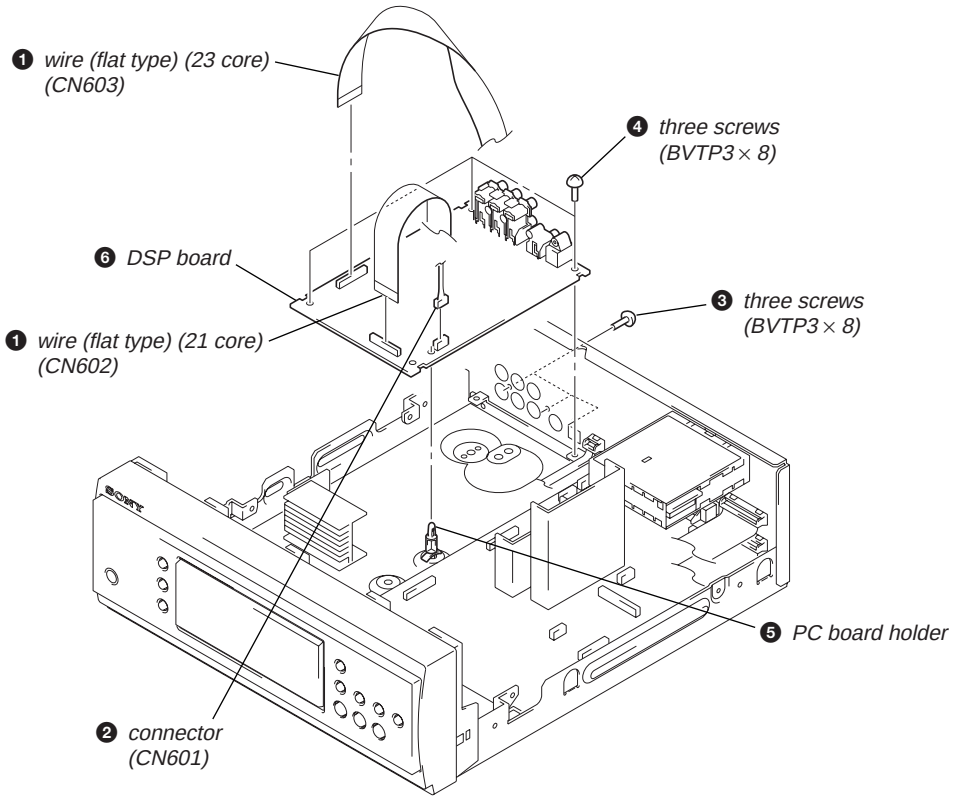
3-5. TUNER PACK (FM/AM)


❸ tuner pack (FM/AM)
❶ wire (flat type) (11 core) (except AEP, UK models)
wire (flat type) (15 core) (AEP, UK models)
(CN506)
❷ two screws
(BVTP3 × 8)

3-6. MAIN BOARD


❶ wire (flat type) (23 core) (CN508)
❷ five connectors (CN510, 5031, 5032, 5041, 5042)
❶ wire (flat type) (21 core) (CN509)
❶ wire (flat type) (19 core) (CN502)
❹ two screws (BVTP3 × 8)
❻ MAIN board
❹ screw (BVTP3 × 8)
❸ three screws (BVTP3 × 8)
❺ PC board holder
❷ connector (CN601)

3-7. DSP BOARD


❶ wire (flat type) (23 core) (CN603)
❹ three screws (BVTP3 × 8)
❻ DSP board
❸ three screws (BVTP3 × 8)
❶ wire (flat type) (21 core) (CN602)
❺ PC board holder
❷ connector (CN601)

SECTION 4
TEST MODE

Note: Use following buttons in the test mode.
no mark : Button of tuner unit (ST-S9)
*1 : Button of amplifier unit (TA-S9D)
*2 : Button of DVD/video CD/CD unit (DVP-S9)

[MC Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure 1:

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the [DIGITAL] *1 button, press the [DISPLAY] button.
3. The set is reset, and becomes standby state.

Procedure 2:

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the both [PLAY MODE] *2 and [■] *2 buttons, press the [►►] *2 button.
3. The set is reset, and becomes standby state.

[MC Hot Reset]

- This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the both [STEREO/MONO] and [CINEMA STUDIO C] *1 buttons, press the [TIMER SELECT] button.
3. The set is reset, and becomes standby state.

[Change-over the AM Tuning Interval] (EXCEPT AEP, UK and Sauidi Arabia models)

- The AM tuning interval can be changed over 9 kHz or 10 kHz.

Procedure:

1. Press the [I/⏻] *1 button to turn the power ON.
2. Turn the [FUNCTION] *1 knob to select "TUNER", and press the [TUNER/BAND] button to select the BAND "AM".
3. Press the [I/⏻] *1 button to turn the power OFF.
4. While pressing the [ENTER] button, press the [I/⏻] *1 button, and the display on the fluorescent indicator tube changes to "AM 9 K STEP" or "AM 10 K STEP", and thus the tuning interval is changed over.

[Change-over of VACS ON/OFF]

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the both [STEREO/MONO] and [CINEMA STUDIO C] *1 buttons, press the [CINEMA STUDIO B] button, and VACS ON/OFF is change over.

[GC Test Mode]
Enter the GC Test Mode

Procedure 1:

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the both [STEREO/MONO] and [CINEMA STUDIO C] *1 buttons, press the [CLOCK/TIMER] button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Procedure 2:

1. Press the [I/⏻] *1 button to turn the power ON.
2. While pressing the both [PLAY MODE] *2 and [■] *2 buttons, press the [⏏] (DISC 1)*2 button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Version Display Mode

Procedure:

1. Enter the GC test mode.
2. Each time the [TUNER MEMORY] or [DISC 1] *2 button is pressed, microcomputer or mechanism deck version is displayed of each unit.
3. Press the [TUNING +] or [DISC 3] *2 button to detail is displayed the version.

Key Check Mode

Procedure:

1. Enter the GC test mode.
2. Press the [TUNING –] or [DISC 2] *2 button to set the key check mode.
3. In the key check the mode, the fluorescent indicator tube displays "K 0 J 0 V 0" . Each time a button is pressed, "K" value increases. However, once a button is pressed, it is no longer taken into account.

VACS Level Display Mode

Procedure:

1. Enter the GC test mode.
2. Press the [TUNING +] or [DISC 3] *2 button to display VACS level on the fluorescent indicator tube.

Segment Check Mode

Procedure:

1. Enter the GC test mode.
2. Press the [ENTER] or [■] *2 button to set the segment check mode.
3. In the segment check the mode. Each [ENTER] or [■] *2 button is pressed, the fluorescent indicator tube displays is switching variously.

Releasing the GC Test Mode

- To release from this mode, press three buttons in the same manner as entering this mode or disconnect the power cord.

SECTION 5
DIAGRAMS

5-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

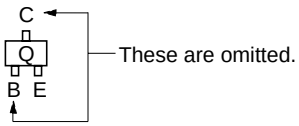
Note on Printed Wiring Board:

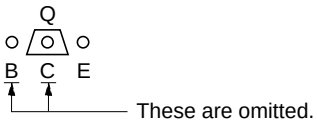
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▬ : Pattern from the side which enables seeing.

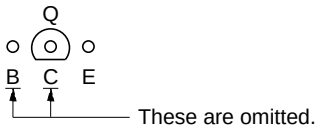
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.







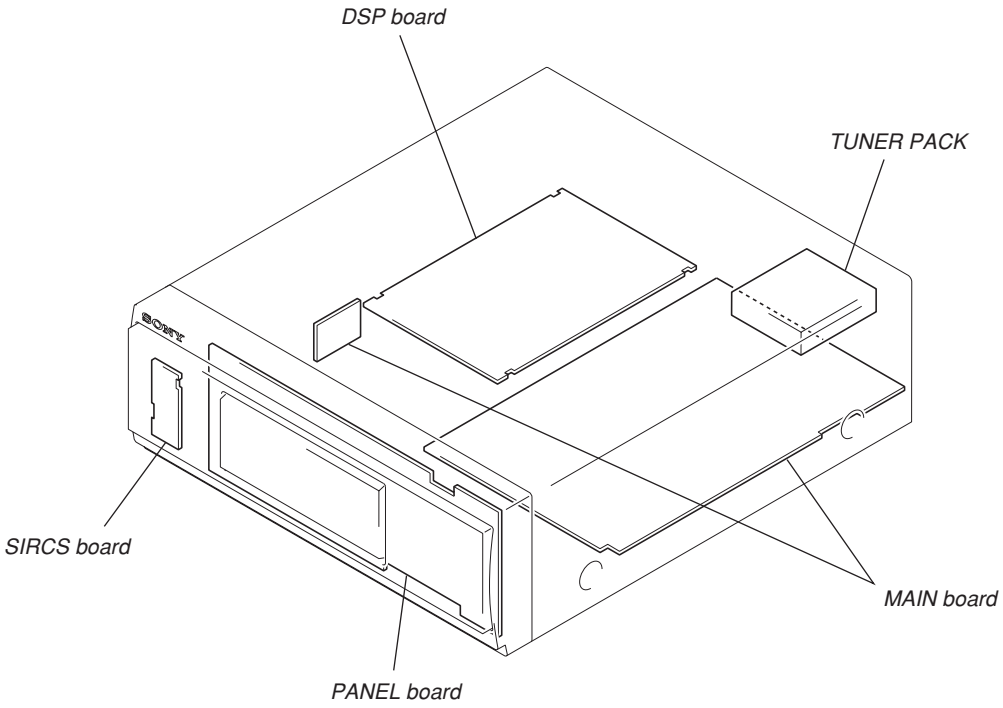
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : fusible resistor.
- : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER (FM/AM)
  ( ) : DVD/CD PLAY
  ⟨⟨ ⟩⟩ : AC OFF
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : TUNER (FM/AM)
  : TAPE PLAY
  : RECORD
  : DIGITAL INPUT
  : DVD/CD PLAY
  : MIC INPUT
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

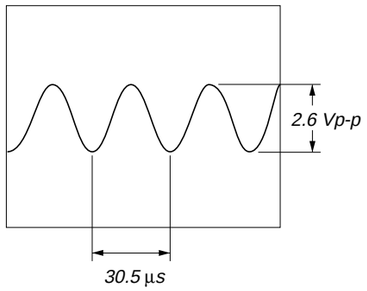
- **Circuit Boards Location**



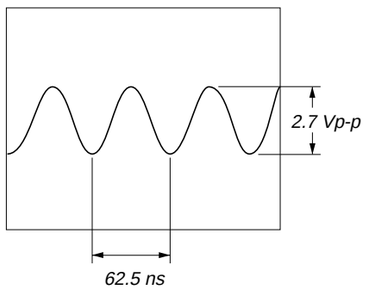
• Waveforms

– MAIN Board –

❶ IC501 ⑪ (XCOUT)

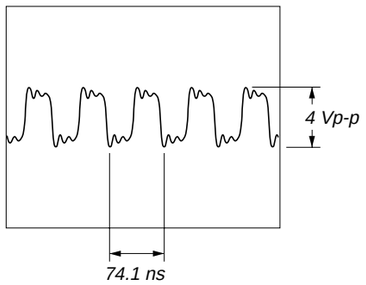


❷ IC501 ⑬ (XOUT)

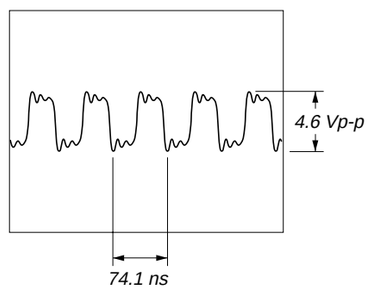


– DSP Board –

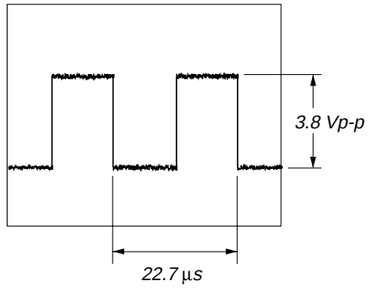
❶ IC601 ⑨ (MCLK1), IC604 ⑳ (XMCK), ㉑ (XOUT)



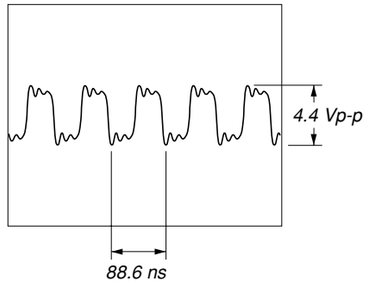
❷ IC601 ⑭ (SCKOUT)



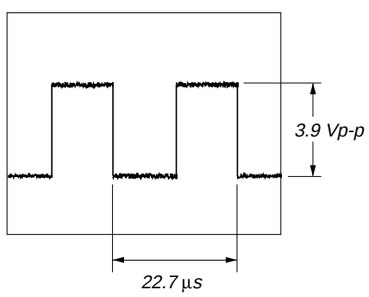
❸ IC601 ⑲ (LRCKO), IC605 ⑤ (LRCK), IC606 ③ (LRCK (I))



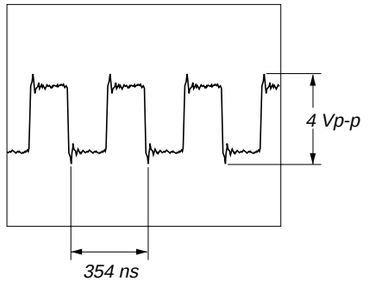
❺ IC601 ㉒ (KFSIO), IC604 ⑬ (CKOUT)



❻ IC601 ㉘ (LRCKI2), IC604 ⑮ (LRCK)

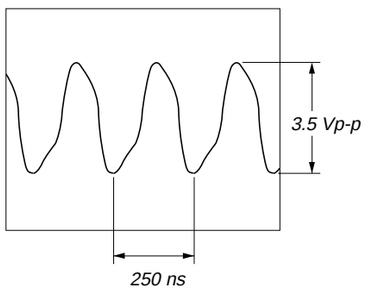


❼ IC601 ㉙ (BCKI2), IC604 ⑭ (BCK)

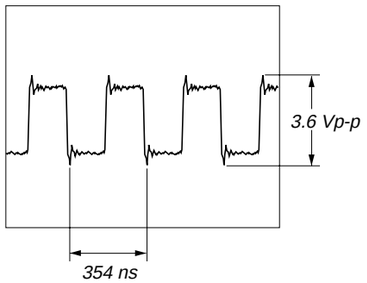


– PANEL Board –

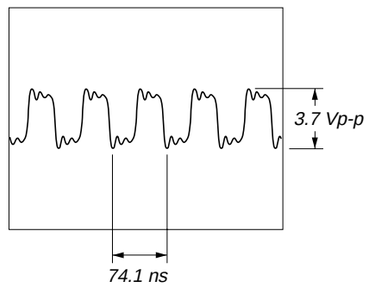
❶ IC601 ㉝ (XOUT)



❹ IC601 ⑳ (BCKO), IC605 ④ (BCK), IC606 ① (BCK (I))



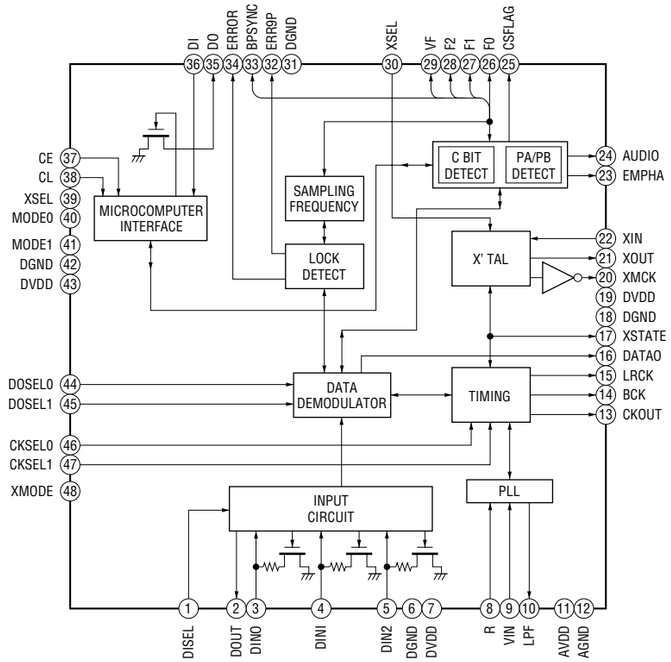
❽ IC606 ⑯ (MCLK (I))



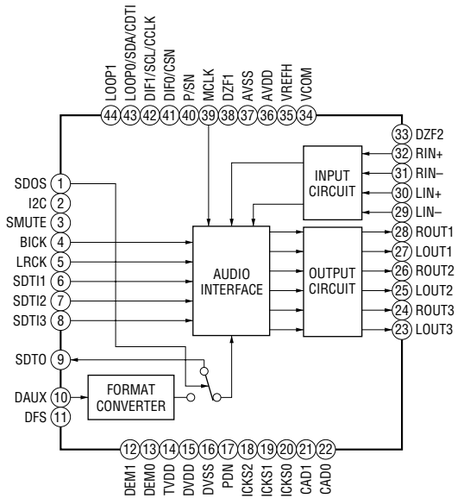
• IC Block Diagrams

– DSP Board –

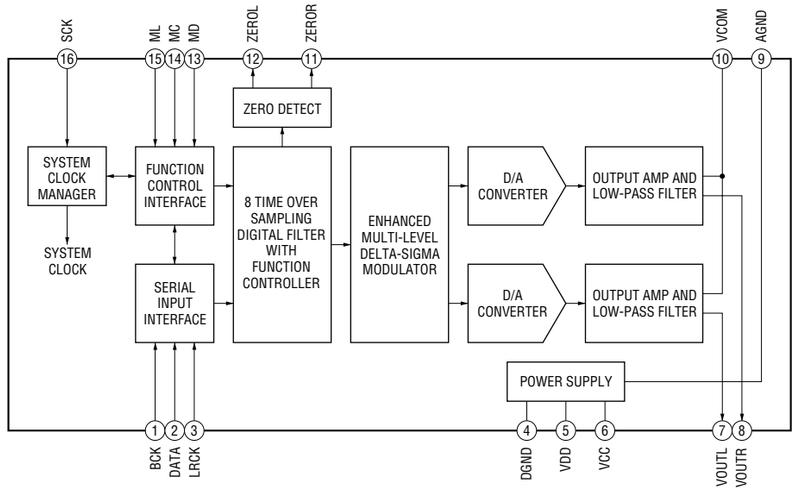
IC604 LC89056W-E



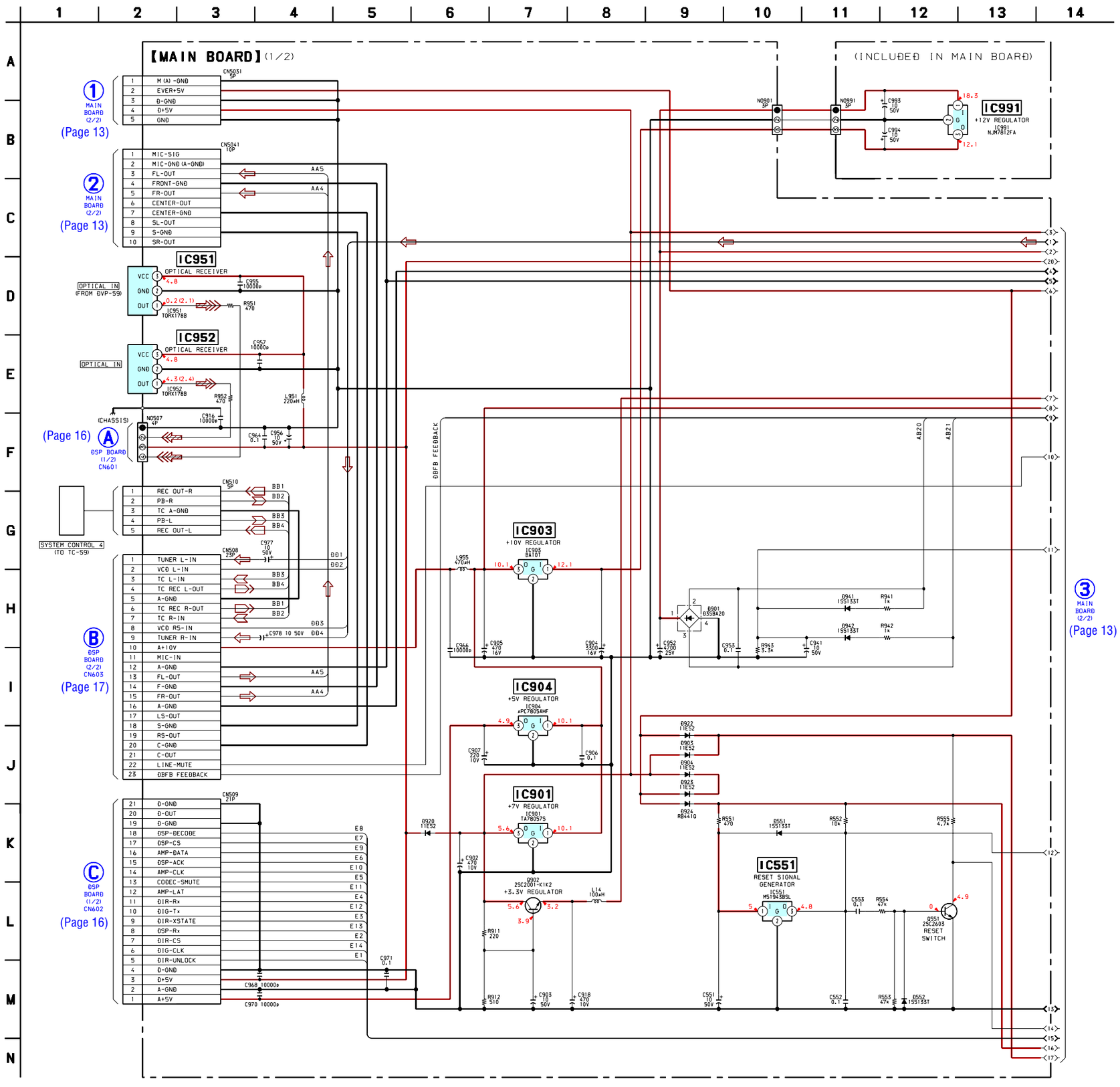
IC605 AK4527



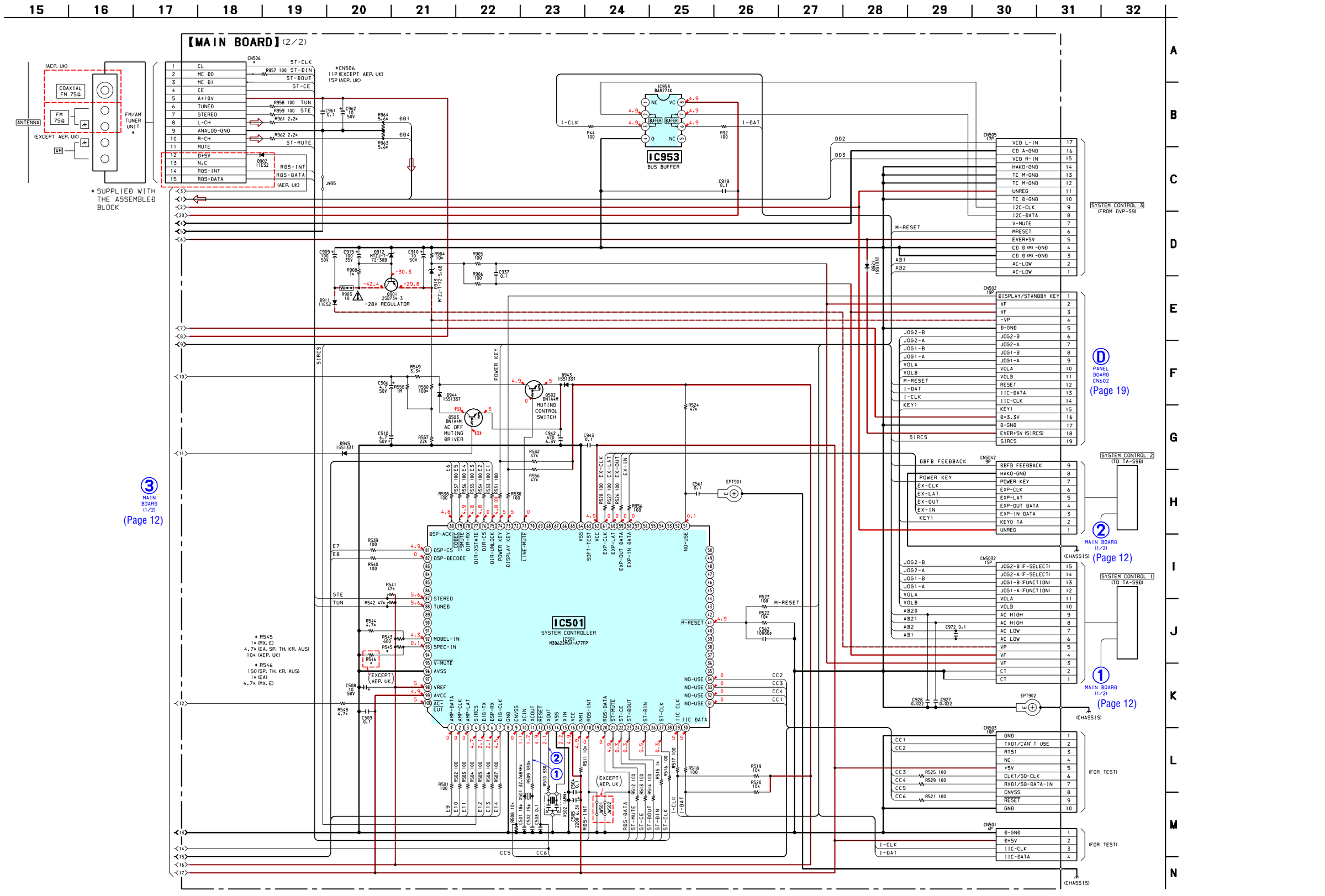
IC606 PCM1748E/2K



5-2. SCHEMATIC DIAGRAM – MAIN Board (1/2) –



5-3. SCHEMATIC DIAGRAM – MAIN Board (2/2) – • See page 11 for Waveforms.

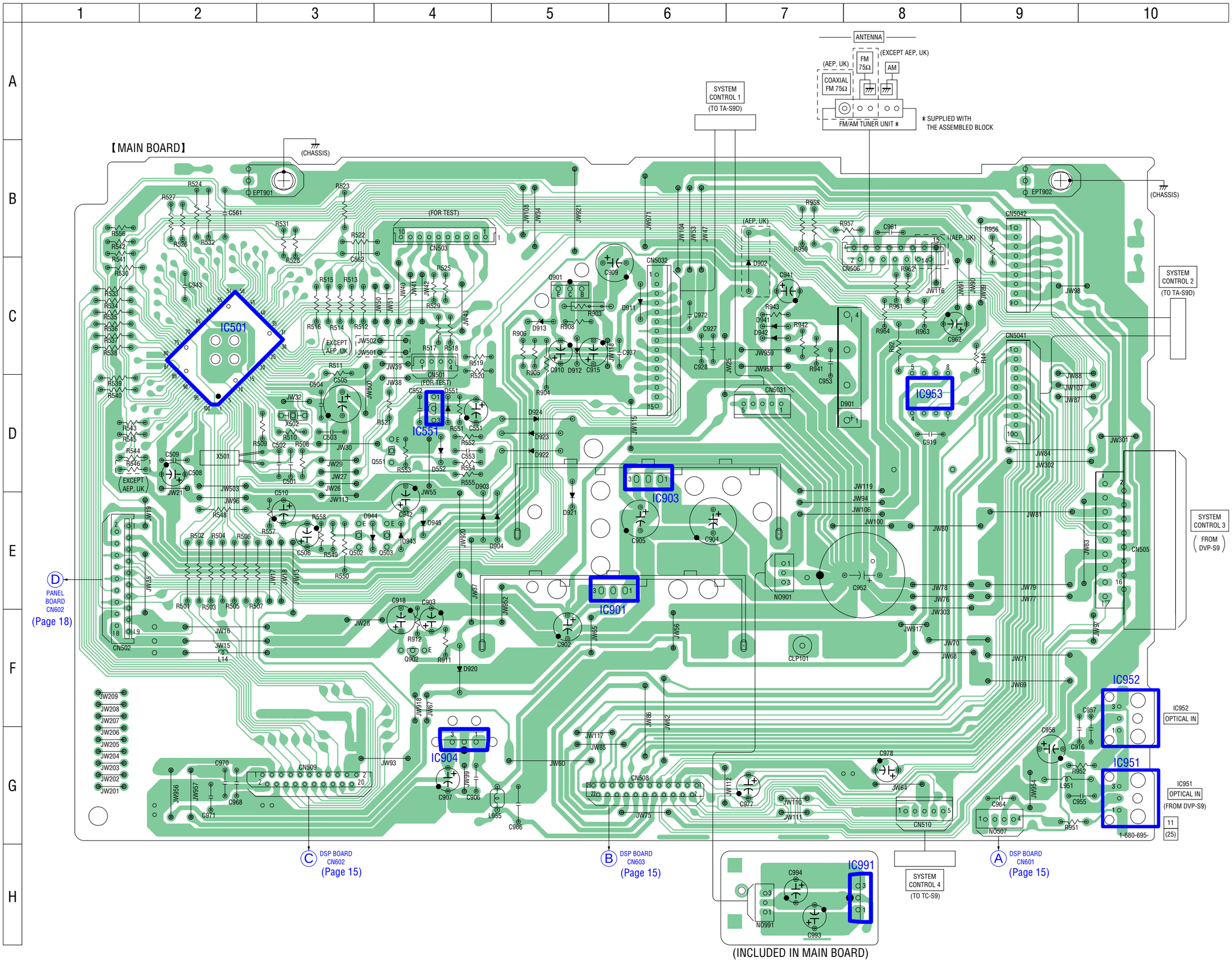


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-4. PRINTED WIRING BOARD – MAIN Board – • See page 10 for Circuit Boards Location.

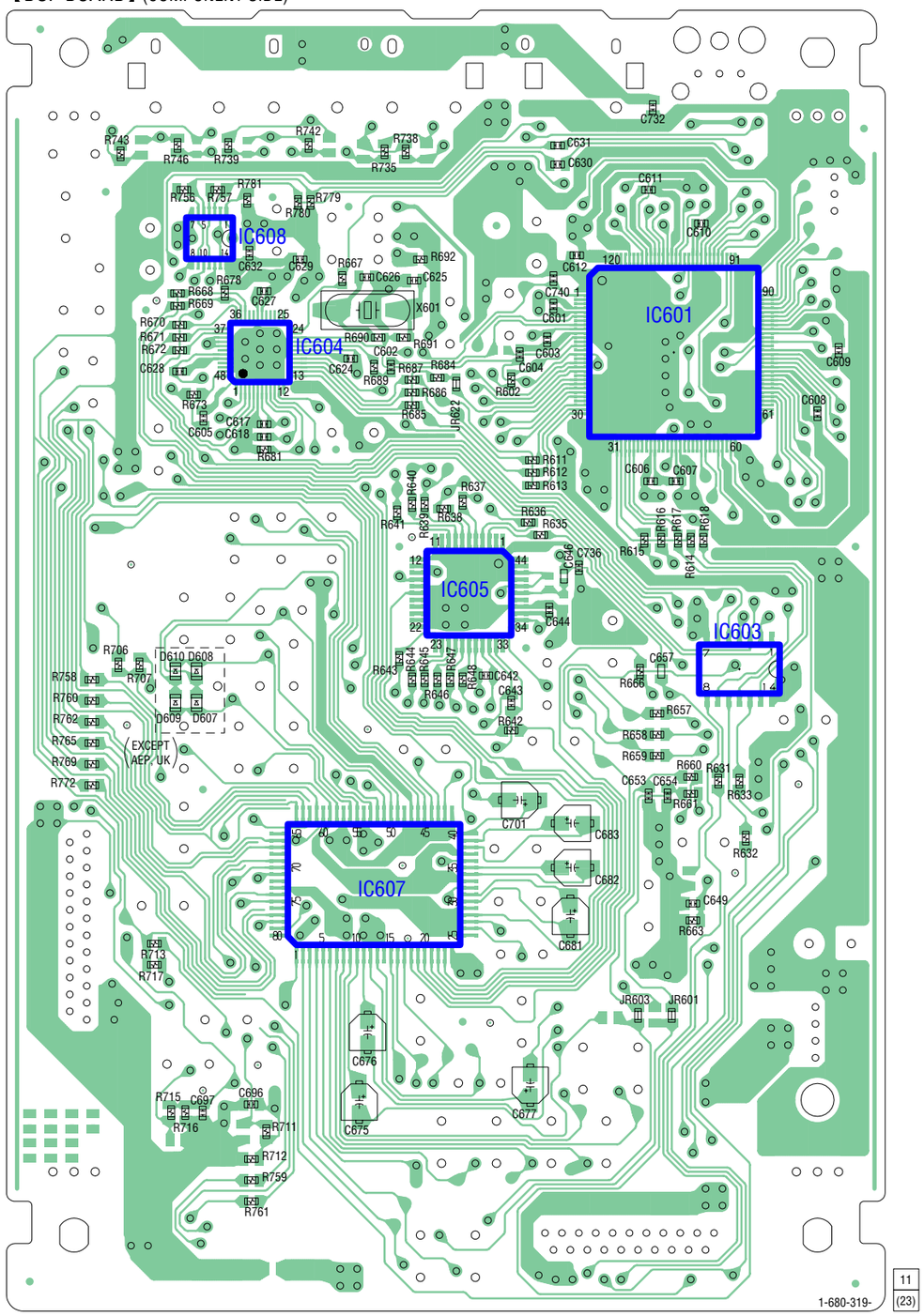
- **Semiconductor Location**

Ref. No.	Location
D551	D-4
D552	D-4
D901	C-8
D902	C-7
D903	E-4
D904	E-5
D911	C-6
D912	C-5
D913	C-5
D920	F-4
D921	E-5
D922	D-5
D923	D-5
D924	D-5
D941	C-7
D942	C-7
D943	E-4
D944	E-3
D945	E-4
IC501	C-2
IC551	D-4
IC901	E-6
IC903	D-6
IC904	G-4
IC951	G-10
IC952	F-10
IC953	D-8
IC991	H-8
Q502	E-3
Q503	E-4
Q551	D-4
Q901	C-5
Q902	F-4

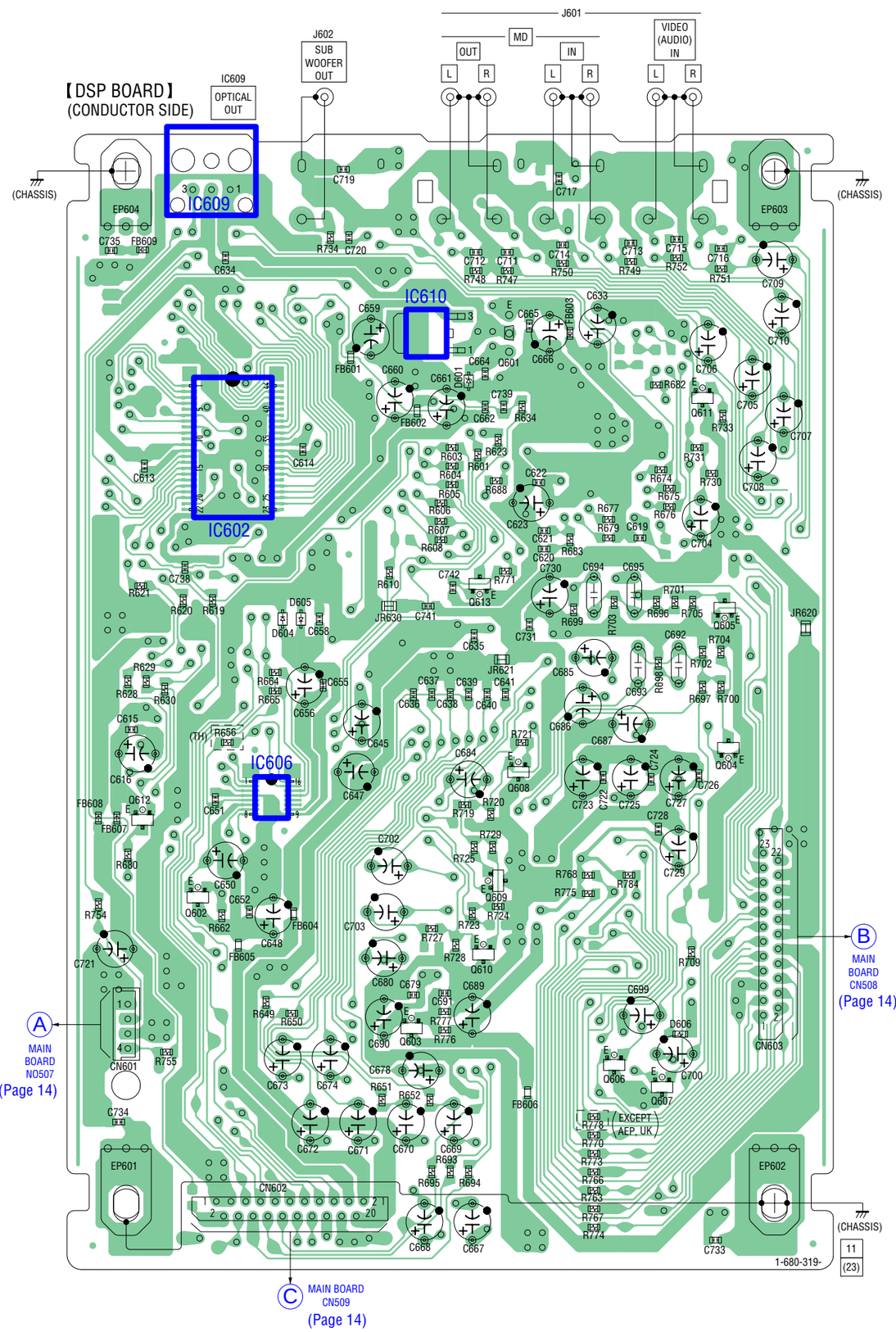


5-5. PRINTED WIRING BOARD – DSP Board – • See page 10 for Circuit Boards Location.

【DSP BOARD】(COMPONENT SIDE)



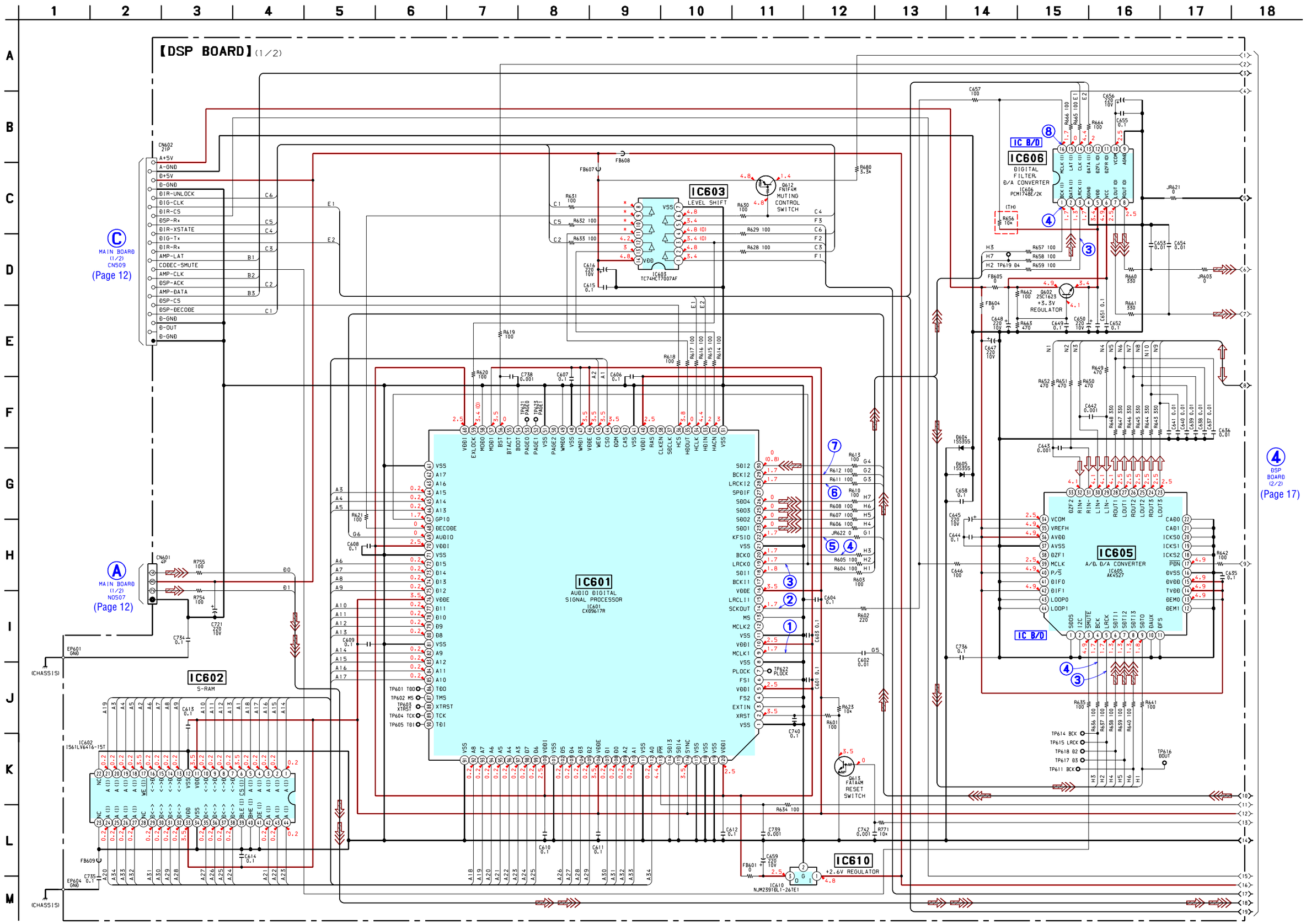
【DSP BOARD】(CONDUCTOR SIDE)



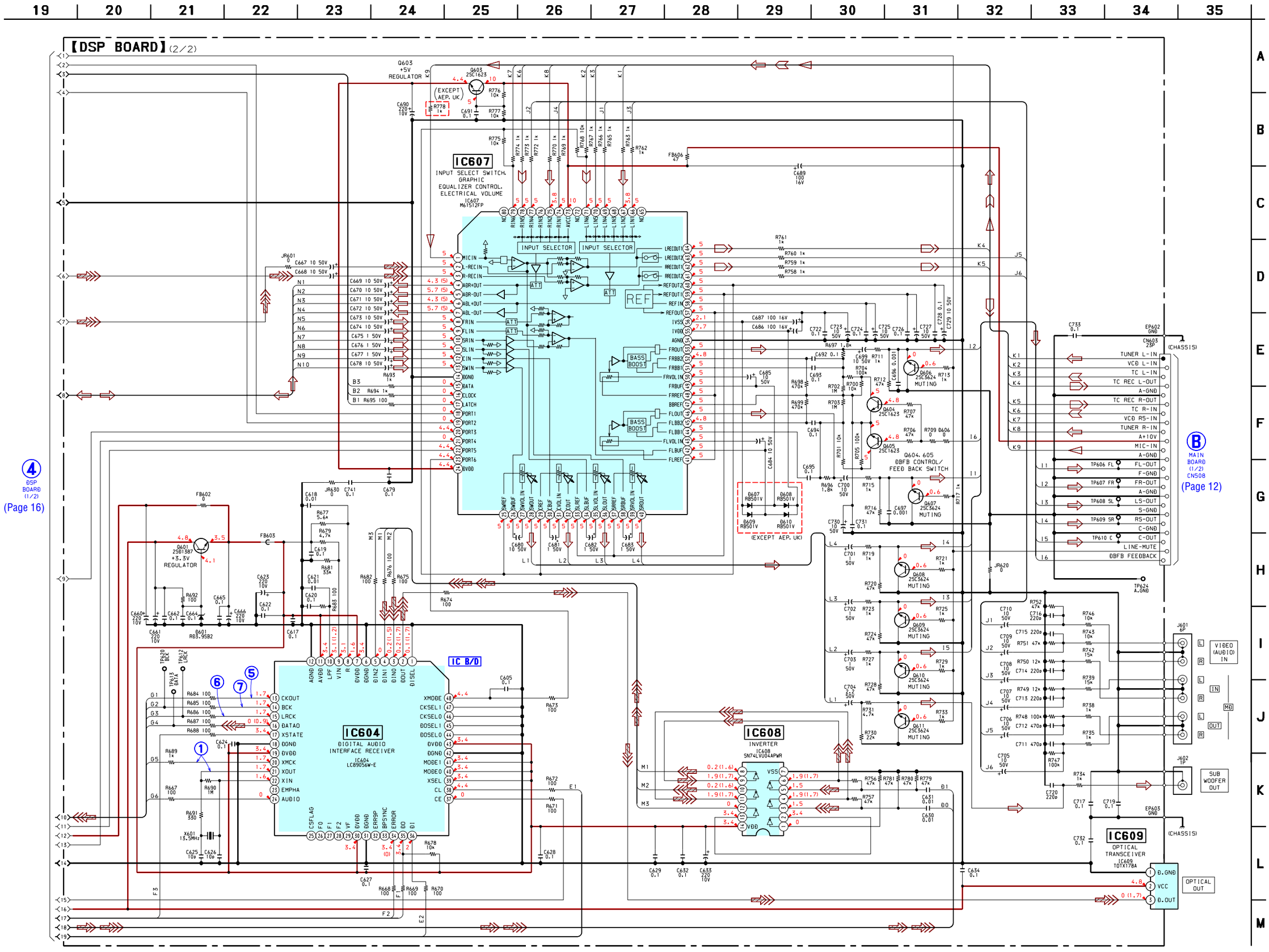
- **Semiconductor Location**

Ref. No.	Location
D601	C-8
D604	D-7
D605	D-7
D607	E-2
D608	E-2
D609	E-1
D610	E-1
IC601	C-4
IC602	C-6
IC603	E-4
IC604	C-2
IC605	D-3
IC606	E-7
IC607	F-2
IC608	C-2
IC609	B-6
IC610	C-7
Q601	C-8
Q602	F-6
Q603	F-7
Q604	E-9
Q605	D-9
Q606	G-8
Q607	G-9
Q608	E-8
Q609	F-8
Q610	F-8
Q611	C-9
Q612	E-6
Q613	D-8

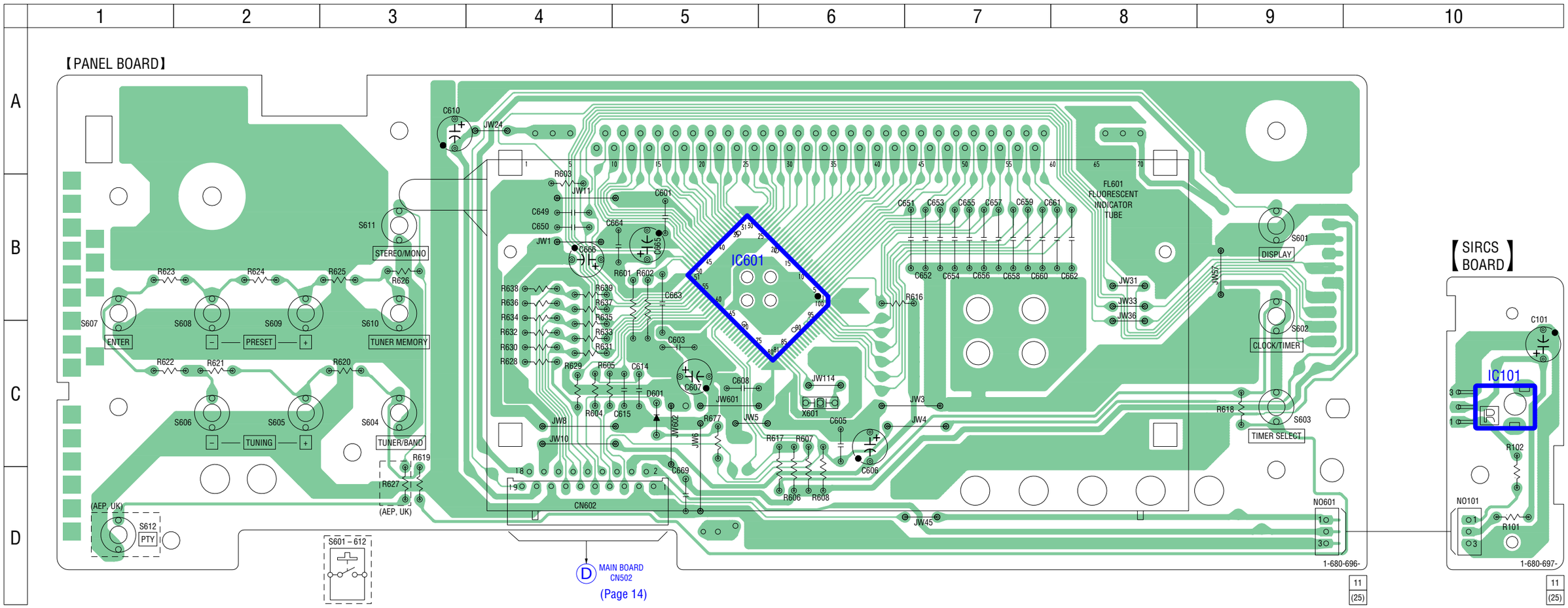
5-6. SCHEMATIC DIAGRAM – DSP Board (1/2) – • See page 11 for Waveforms. • See page 11 for IC Block Diagrams.



5-7. SCHEMATIC DIAGRAM – DSP Board (2/2) – • See page 11 for Waveforms. • See page 11 for IC Block Diagram.



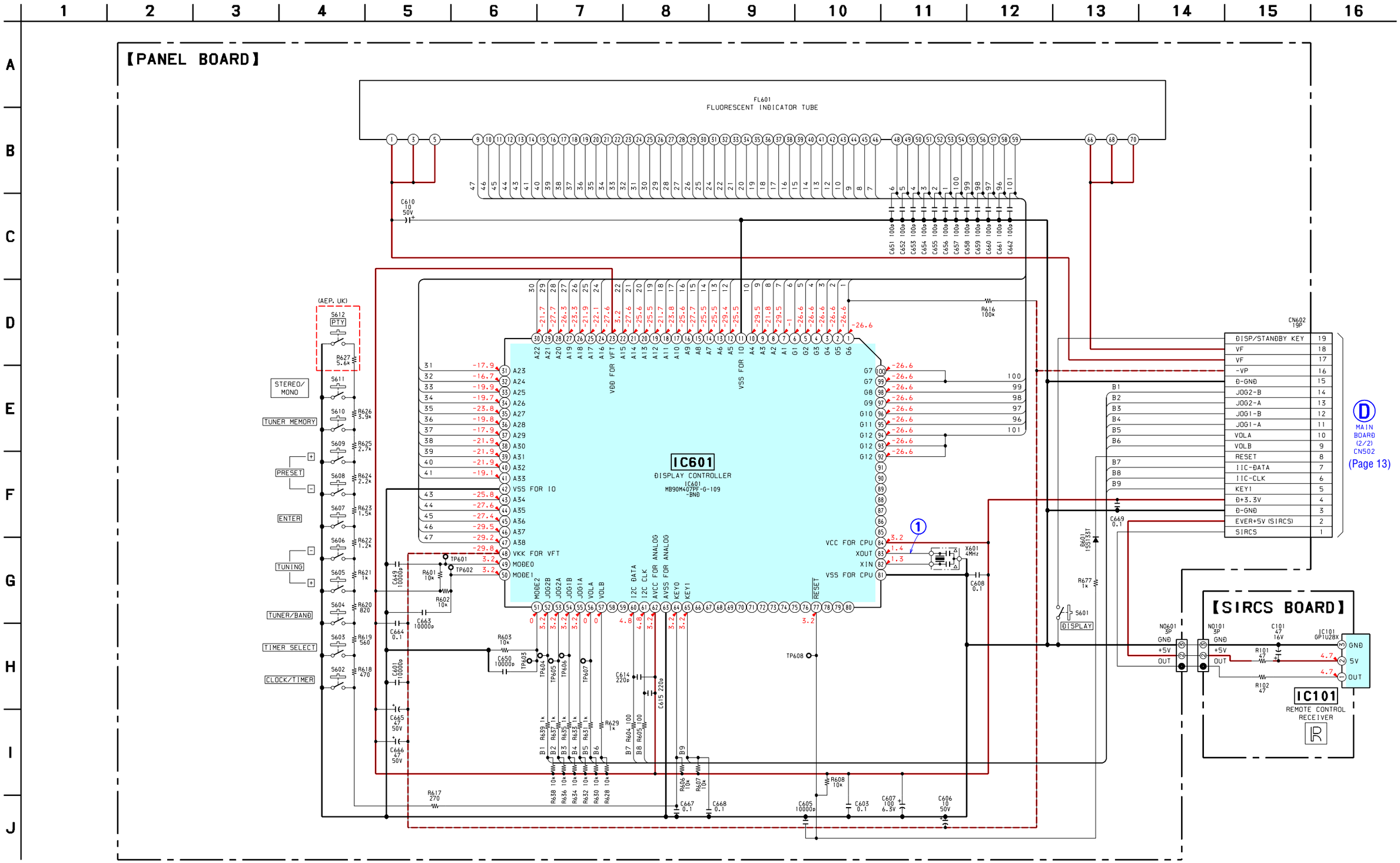
5-8. PRINTED WIRING BOARDS – PANEL Section – • See page 10 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D601	C-5
IC101	C-10
IC601	B-5

5-9. SCHEMATIC DIAGRAM – PANEL Section – • See page 11 for Waveform.



5-10. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC501 M30622MGA-A77FP (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	AMP-DATA	O	Serial data output to the M61512FP (IC607)
2	AMP-CLK	O	Serial data transfer clock signal output to the M61512FP (IC607)
3	AMP-LAT	O	Serial data latch pulse signal output to the M61512FP (IC607)
4	SIRCS	I	Remote control signal input from the remote control receiver (IC101)
5	DIG-TX	O	Serial data output to the CXD9617R (IC601), digital audio interface receiver (IC604) and digital filter (IC606)
6	DSP-RX	I	Serial data input from the digital audio interface receiver (IC604)
7	DIG-CLK	O	Serial data transfer clock signal output to the CXD9617R (IC601), digital audio interface receiver (IC604) and digital filter (IC606)
8	GND	—	Ground terminal
9	CNVSS	—	Not used
10	XCIN	I	Sub system clock input terminal (32.768 kHz)
11	XCOUT	O	Sub system clock output terminal (32.768 kHz)
12	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC551) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
13	XOUT	O	Main system clock output terminal (16 MHz)
14	VSS	—	Ground terminal
15	XIN	I	Main system clock input terminal (16 MHz)
16	VCC	—	Power supply terminal (+5V)
17	NMI	I	Non-maskable interrupt input terminal Fixed at “H” in this set
18	RDS-INT	I	Serial data transfer clock signal input from the RDS decoder on the FM/AM tuner unit (Used for the AEP and UK models)
19	—	—	Not used (open)
20	RDS-DATA	I	Serial data input from the RDS decoder on the FM/AM tuner unit (Used for the AEP and UK models)
21	$\overline{\text{ST-MUTE}}$	O	Tuner muting on/off control signal output to the FM/AM tuner unit “L”: muting on
22	ST-CE	O	Chip enable signal output to the FM/AM tuner unit
23	ST-DOUT	O	Serial data output to the FM/AM tuner unit
24	—	—	Not used (open)
25	ST-DIN	I	Serial data input from the FM/AM tuner unit
26	—	—	Not used (open)
27	ST-CLK	O	Serial data transfer clock signal output to the FM/AM tuner unit
28	—	—	Not used (open)
29	IIC CLK	I/O	Communication data reading clock signal input or transfer clock signal output with the display controller (IC601) and DVP-S9
30	IIC DATA	I/O	Communication data bus with the display controller (IC601) and DVP-S9
31 to 34	NO-USE	—	Not used
35 to 40	—	—	Not used (open)
41	$\overline{\text{M-RESET}}$	O	Reset signal output to the display controller (IC601) “L”: reset
42 to 50	—	—	Not used (open)
51	NO-USE	—	Not used
52 to 57	—	—	Not used (open)
58	EXP-IN DATA	I	Serial data input from the I/O expander in the TA-S9D
59	EXP-OUT DATA	O	Serial data output to the I/O expander in the TA-S9D
60	EXP-LAT	O	Serial data latch pulse signal output to the I/O expander in the TA-S9D
61	EXP-CLK	O	Serial data transfer clock signal output to the I/O expander in the TA-S9D
62	VCC	—	Power supply terminal (+5V)
63	SOFT-TEST	O	Soft test output terminal Not used (open)
64	VSS	—	Ground terminal
65 to 70	—	—	Not used (open)
71	$\overline{\text{LINE-MUTE}}$	O	Audio line muting on/off control signal output to the audio line circuit “L”: muting on
72	—	—	Not used (open)
73	DISPLAY KEY	I	DISPLAY switch (S601) input terminal
74	POWER KEY	I	Power on/off switch in the TA-S9D input terminal
75	DIR-UNLOCK	I	PLL lock error and data error flag input from the digital audio interface receiver (IC604)
76	DIR-CS	O	Chip enable signal output to the digital audio interface receiver (IC604)
77	DIR-XSTATE	I	Source clock switching monitor input from the digital audio interface receiver (IC604)
78	DIR-RX	I	Read data input from the digital audio interface receiver (IC604)
79	$\overline{\text{CODEC-SMUTE}}$	O	Soft muting on/off control signal output to the A/D, D/A converter (IC605) “L”: muting on
80	DSP-ACK	I	Acknowledge signal input from the CXD9617R (IC601)
81	DSP-CS	O	Chip select signal output to the CXD9617R (IC601)
82	DSP-DECODE	I	Decode signal input from the CXD9617R (IC601)
83 to 86	—	—	Not used (open)
87	STEREO	I	FM stereo detection signal input from the FM/AM tuner unit “L”: stereo
88	TUNED	I	Tuning detection signal input from the FM/AM tuner unit “L”: tuned
89 to 91	—	—	Not used (open)
92	MODEL-IN	I	Model setting terminal
93	SPEC-IN	I	Specification setting terminal
94	—	—	Not used (open)
95	$\overline{\text{V-MUTE}}$	O	Video muting on/off control signal output terminal “L”: muting on Not used (open)
96	AVSS	—	Ground terminal
97	—	—	Not used (open)
98	VREF	I	Reference voltage (+5V) input terminal
99	AVCC	—	Power supply terminal (+5V)
100	$\overline{\text{AC-CUT}}$	I	AC cut on/off detection signal input from the reset signal generator (IC551) “L”: AC cut on, “H”: AC cut off or checked

• **DSP BOARD IC601 CXD9617R (AUDIO DIGITAL SIGNAL PROCESSOR)**

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	XRST	I	Reset signal input from the M61512FP (IC607) "L": reset
3	EXTIN	I	Master clock signal input terminal Not used (fixed at "L")
4	FS2	I	Sampling frequency selection signal input terminal Not used (fixed at "L")
5	VDDI	—	Power supply terminal (+2.6V)
6	FS1	I	Sampling frequency selection signal input terminal Not used (fixed at "L")
7	PLOCK	O	Internal PLL lock signal output terminal Not used (open)
8	VSS	—	Ground terminal
9	MCLK1	I	Oscillation clock signal input from the digital audio interface receiver (IC604)
10	VDDI	—	Power supply terminal (+2.6V)
11	VSS	—	Ground terminal
12	MCLK2	O	Oscillation clock signal output terminal Not used (open)
13	MS	I	Master/slave selection signal input terminal "L": slave, "H": master (fixed at "L" in this set)
14	SCKOUT	O	Internal system clock signal output to the digital filter (IC606)
15	LRCKI1	I	L/R sampling clock signal (44.1 kHz) input terminal Not used (open)
16	VDDE	—	Power supply terminal (+3.3V)
17	BCKI1	I	Bit clock signal (2.8224 MHz) input terminal Not used (open)
18	SDI1	I	Audio serial data input from the D/A, A/D converter (IC605)
19	LRCKO	O	L/R sampling clock signal (44.1 kHz) output to the D/A, A/D converter (IC605) and digital filter (IC606)
20	BCKO	O	Bit clock signal (2.8224 MHz) output to the D/A, A/D converter (IC605) and digital filter (IC606)
21	VSS	—	Ground terminal
22	KFSIO	I	Audio clock signal input from the digital audio interface receiver (IC604)
23 to 25	SDO1 to SDO3	O	Audio serial data output to the A/D, D/A converter (IC604)
26	SDO4	O	Audio serial data output to the digital filter (IC606)
27	SPDIF	O	S/PDIF signal output terminal Not used (open)
28	LRCKI2	I	L/R sampling clock signal (44.1 kHz) input from the digital audio interface receiver (IC604)
29	BCKI2	I	Bit clock signal (2.8224 MHz) input from the digital audio interface receiver (IC604)
30	SDI2	I	Audio serial data input from the digital audio interface receiver (IC604)
31	VSS	—	Ground terminal
32	HACN	O	Acknowledge signal output to the system controller (IC501)
33	HDIN	I	Write data input from the system controller (IC501)
34	HCLK	I	Clock signal input from the system controller (IC501)
35	HDOUT	O	Read data output to the system controller (IC501)
36	HCS	I	Chip select signal input from the system controller (IC501)
37	SDCLK	O	Clock signal output terminal Not used (open)
38	CLKEN	O	Clock enable signal output terminal Not used (open)
39	RAS	O	Row address strobe signal output terminal Not used (open)
40	VDDI	—	Power supply terminal (+2.6V)
41	VSS	—	Ground terminal
42	CAS	O	Column address strobe signal output terminal Not used (open)
43	DQM	O	Output terminal of data input/output mask Not used (open)
44	CS0	O	Chip select signal output to the S-RAM (IC602)
45	WE0	O	Write enable signal output to the S-RAM (IC602)
46	VDDE	—	Power supply terminal (+3.3V)
47	WMD1	I	S-RAM wait mode setting terminal Fixed at "H" in this set

Pin No.	Pin Name	I/O	Description
48	VSS	—	Ground terminal
49	WMD0	I	S-RAM wait mode setting terminal Fixed at “L” in this set
50	PAGE2	O	Page selection signal output terminal Not used (open)
51	VSS	—	Ground terminal
52, 53	PAGE1, PAGE0	O	Page selection signal output terminal Not used (open)
54	BOOT	I	Boot mode control signal input terminal Not used (fixed at “L”)
55	BTACT	O	Boot mode state display signal output terminal Not used (open)
56	BST	I	Boot trap signal input from the M61512FP (IC607)
57	MOD1	I	PLL input frequency select terminal “L”: 384fs, “H”: 256fs (fixed at “H” in this set)
58	MOD0	I	Mode setting terminal “L”: single chip mode, “H”: use prohibition (fixed at “L” in this set)
59	EXLOCK	I	PLL lock error and data error flag input from the digital audio interface receiver (IC604)
60	VDDI	—	Power supply terminal (+2.6V)
61	VSS	—	Ground terminal
62, 63	A17, A16	O	Address signal output terminal Not used (open)
64 to 66	A15 to A13	O	Address signal output to the S-RAM (IC602)
67	GP10	O	L/R sampling clock signal (44.1 kHz) output to the D/A, A/D converter (IC605) and digital filter (IC606)
68	DECODE	O	Decode signal output to the system controller (IC501)
69	AUDIO	I	Bit 1 input terminal of channel status from the digital audio interface receiver (IC604)
70	VDDI	—	Power supply terminal (+2.6V)
71	VSS	—	Ground terminal
72 to 75	D15 to D12	I/O	Two-way data bus with the S-RAM (IC602)
76	VDDE	—	Power supply terminal (+3.3V)
77 to 80	D11 to D8	I/O	Two-way data bus with the S-RAM (IC602)
81	VSS	—	Ground terminal
82 to 85	A9, A12 to A10	O	Address signal output to the S-RAM (IC602)
86	TDO	O	Simple emulation data output terminal Not used (open)
87	TMS	I	Simple emulation data input start/end detection signal input terminal Not used (open)
88	XTRST	I	Simple emulation asychronous break input terminal Not used (open)
89	TCK	I	Simple emulation clock signal input terminal Not used (open)
90	TDI	I	Simple emulation data input terminal Not used (open)
91	VSS	—	Ground terminal
92 to 97	A8 to A3	O	Address signal output to the S-RAM (IC602)
98, 99	D7, D6	I/O	Two-way data bus with the S-RAM (IC602)
100	VDDI	—	Power supply terminal (+2.6V)
101	VSS	—	Ground terminal
102 to 105	D5 to D2	I/O	Two-way data bus with the S-RAM (IC602)
106	VDDE	—	Power supply terminal (+3.3V)
107, 108	D1, D0	I/O	Two-way data bus with the S-RAM (IC602)
109, 110	A2, A1	O	Address signal output to the S-RAM (IC602)
111	VSS	—	Ground terminal
112	A0	O	Address signal output to the S-RAM (IC602)
113	$\overline{\text{PM}}$	I	PLL reset signal input from the M61512FP (IC607) “L”: reset
114, 115	SDI3, SDI4	I	Audio serial data input terminal Not used (fixed at “L”)
116	SYNC	I	Synchronous/asychronous selection signal input terminal “L”: Synchronous, “H”: asynchronous (fixed at “H” in this set)
117 to 119	VSS	—	Ground terminal
120	VDDI	—	Power supply terminal (+2.6V)

• **DSP BOARD IC604 LC89056W-E (DIGITAL AUDIO INTERFACE RECEIVER)**

Pin No.	Pin Name	I/O	Description
1	DISEL	I	Selection terminal of data input terminal Fixed at "L" in this set
2	DOUT	O	Digital data output to the optical transceiver (IC609)
3	DIN0	I	Digital data input from the optical receiver (IC952) (for DVP-S9)
4	DIN1	I	Digital data input from the optical receiver (IC951) (for external input)
5	DIN2	I	Digital data input terminal Not used (fixed at "L")
6	DGND	—	Ground terminal (digital system)
7	DVDD	—	Power supply terminal (+3.3V) (digital system)
8	R	I	VCO gain control input terminal
9	VIN	I	VCO free run frequency setting input terminal
10	LPF	O	PLL loop filter setting output terminal
11	AVDD	—	Power supply terminal (+3.3V) (analog system)
12	AGND	—	Ground terminal (analog system)
13	CKOUT	O	Audio clock signal output to the CXD9617R (IC601)
14	BCK	O	Bit clock signal (2.8224 MHz) output to the CXD9617R (IC601)
15	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the CXD9617R (IC601)
16	DATAO	O	Audio serial data output to the CXD9617R (IC601)
17	XSTATE	O	Source clock switching monitor output to the system controller (IC501)
18	DGND	—	Ground terminal (digital system)
19	DVDD	—	Power supply terminal (+3.3V) (digital system)
20	XMCK	O	Oscillation clock signal output to the CXD9617R (IC601)
21	XOUT	O	System clock output terminal (13.5 MHz)
22	XIN	I	System clock input terminal (13.5 MHz)
23	EMPHA	O	Emphasis information of channel status output terminal Not used (open)
24	AUDIO	O	Bit 1 output terminal of channel status to the CXD9617R (IC601)
25	CSFLAG	O	Top 40 bit renovation flag output terminal of channel status Not used (open)
26 to 28	F0 to F2	O	Input frequency calculation result output terminal Not used (open)
29	VF	O	Validity flag output terminal Not used (open)
30	DVDD	—	Power supply terminal (+3.3V) (digital system)
31	DGND	—	Ground terminal (digital system)
32	ERR9P	O	Nine times continuance data transmission error flag output terminal Not used (open)
33	BPSYNC	O	Non-PCM burst and preamble sync signal output terminal Not used (open)
34	ERROR	O	PLL lock error and data error flag output to the system controller (IC501)
35	DO	O	Read data output to the system controller (IC501)
36	DI	I	Write data input from the system controller (IC501)
37	CE	I	Chip enable signal input from the system controller (IC501)
38	CL	I	Clock signal input from the system controller (IC501)
39	XSEL	I	Selection input terminal of vibrator frequency terminal Fixed at "H" in this set
40	MODE0	I	Mode setting input terminal Fixed at "H" in this set
41	MODE1	I	Mode setting input terminal Fixed at "H" in this set
42	DGND	—	Ground terminal (digital system)
43	DVDD	—	Power supply terminal (+3.3V) (digital system)
44	DOSEL0	I	Output data format selection signal input terminal Fixed at "L" in this set
45	DOSEL1	I	Output data format selection signal input terminal Fixed at "L" in this set
46	CKSEL0	I	Output clock selection signal input terminal Fixed at "L" in this set
47	CKSEL1	I	Output clock selection signal input terminal Fixed at "L" in this set
48	XMODE	I	System reset signal input from the M61512FP (IC607)

• **DSP BOARD IC605 AK4527 (A/D, D/A CONVERTER)**

Pin No.	Pin Name	I/O	Description
1	SDOS	I	Audio serial data source selection signal input terminal "L": internal ADC output, "H": DAUX input (fixed at "L" in this set)
2	I2C	I	Serial control mode selection signal input terminal "L": 3-wire serial, "H": I2C bus
3	$\overline{\text{SMUTE}}$	I	Soft muting on/off signal input from the system controller (IC501) "L": muting on
4	BICK	I	Bit clock signal (2.8224 MHz) input from the CXD9617R (IC601)
5	LRCK	I	L/R sampling clock (44.1 kHz) signal input from the CXD9617R (IC601)
6 to 8	SDTI1 to SDIT3	I	Audio serial data input from the CXD9617R (IC601)
9	SDTO	O	Audio serial data output to the CXD9617R (IC601)
10	DAUX	I	Audio serial data input terminal Not used (fixed at "L")
11	DFS	I	Double speed sampling mode signal input terminal "L": normal speed, "H": double speed (fixed at "L" in this set)
12	DEM1	I	De-emphasis signal input terminal Fixed at "L" in this set
13	DEM0	I	De-emphasis signal input terminal Fixed at "H" in this set
14	TVDD	—	Power supply terminal (+5V) (for output buffer)
15	DVDD	—	Power supply terminal (+5V) (digital system)
16	DVSS	—	Ground terminal (digital system)
17	$\overline{\text{PDN}}$	I	Power down and reset signal input from the M61512FP (IC607) "L": power down and reset
18 to 20	ICKS2 to ICKS0	I	Input clock signal selection terminal Fixed at "L" in this set
21, 22	CAD1, CAD0	I	Chip address signal input terminal Not used (fixed at "L")
23	LOUT3	O	Analog signal output for center to the M61512FP (IC607)
24	ROUT3	O	Analog signal output for sub woofer to the M61512FP (IC607)
25	LOUT2	O	Analog signal output for surround L-ch to the M61512FP (IC607)
26	ROUT2	O	Analog signal output for surround R-ch to the M61512FP (IC607)
27	LOUT1	O	Analog signal output for front L-ch to the M61512FP (IC607)
28	ROUT1	O	Analog signal output for front R-ch to the M61512FP (IC607)
29	LIN–	I	L-ch analog signal negative input from the M61512FP (IC607)
30	LIN+	I	L-ch analog signal positive input from the M61512FP (IC607)
31	RIN–	I	R-ch analog signal negative input from the M61512FP (IC607)
32	RIN+	I	R-ch analog signal positive input from the M61512FP (IC607)
33	DZF2	I	Zero input detection terminal Not used (open)
34	VCOM	O	Common voltage output terminal Large external capacitor is used to reduce power supply noise
35	VREFH	I	Reference voltage (+5V) input terminal
36	AVDD	—	Power supply terminal (+5V) (analog system)
37	AVSS	—	Ground terminal (analog system)
38	DZF1	I	Zero input detection terminal Not used (open)
39	MCLK	I	Master clock signal input from the CXD9617R (IC601)
40	P/$\overline{\text{S}}$	I	Parallel/serial selection signal input terminal "L": serial control mode, "H": parallel control mode (fixed at "H" in this set)
41	DIF0	I	Audio data interface format terminal Fixed at "L" in this set
42	DIF1	I	Audio data interface format terminal Fixed at "H" in this set
43, 44	LOOP0, LOOP1	I	Loop back mode setting terminal Fixed at "L" in this set

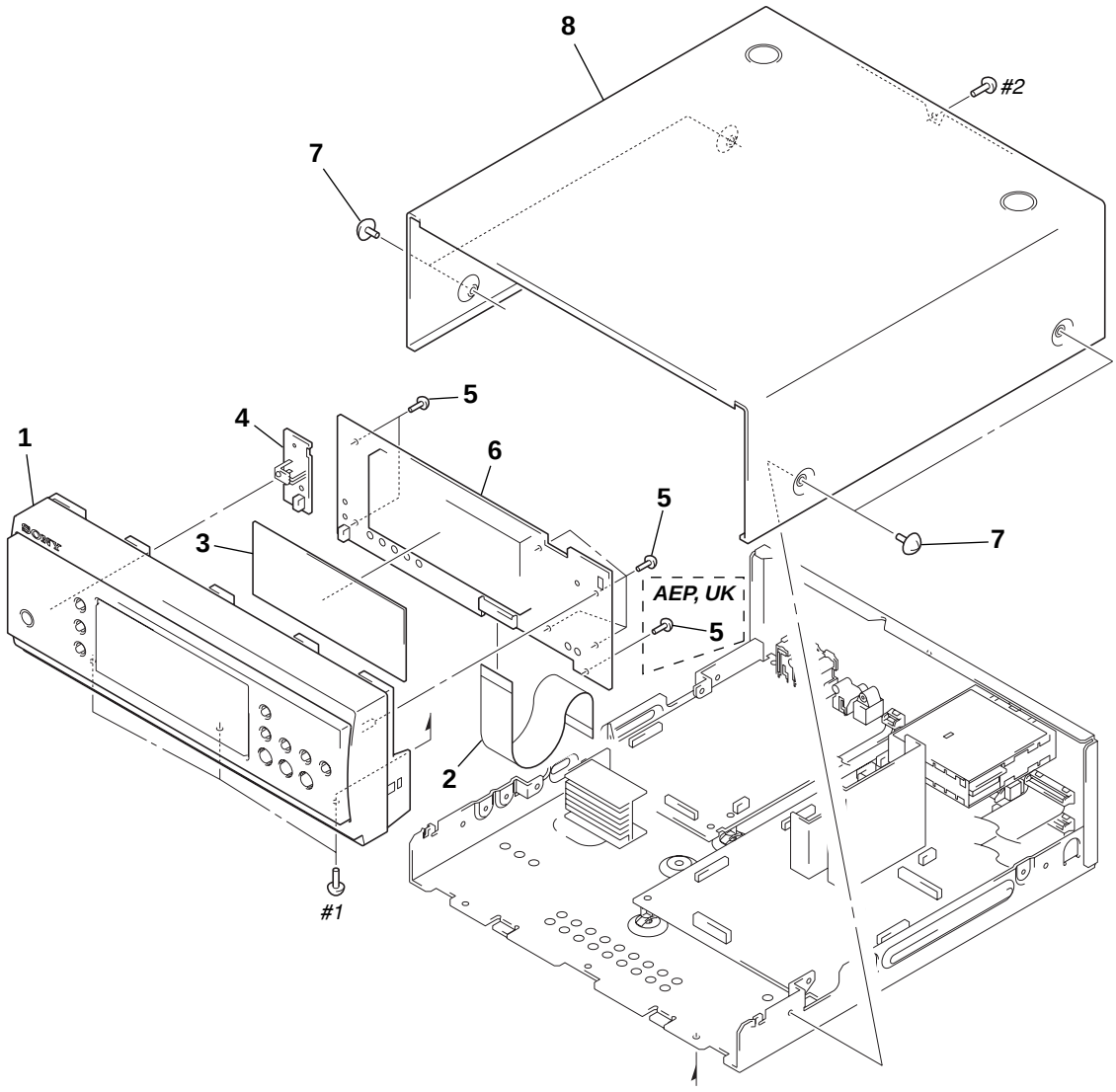
• **PANEL BOARD IC601 MB90M407PF-G-109-BND (DISPLAY CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1 to 6	G6 to G1	O	Grid drive signal output to the fluorescent indicator tube (FL601)
7 to 10	A1 to A4	O	Segment drive signal output to the fluorescent indicator tube (FL601)
11	VSS FOR IO	—	Ground terminal (for I/O)
12 to 22	A5 to A15	O	Segment drive signal output to the fluorescent indicator tube (FL601)
23	VDD FOR VFT	—	Power supply terminal (+3.3V) (for VFT)
24 to 41	A16 to A33	O	Segment drive signal output to the fluorescent indicator tube (FL601)
42	VSS FOR IO	—	Ground terminal (for I/O)
43 to 47	A34 toA38	O	Segment drive signal output to the fluorescent indicator tube (FL601)
48	VKK FOR VFT	—	Power supply terminal (–28V) (for VFT)
49	MODE0	—	Chip mode selection terminal Not used (fixed at "H")
50	MODE1	—	Chip mode selection terminal Not used (fixed at "H")
51	MODE2	—	Chip mode selection terminal Not used (fixed at "L")
52	JOG2B	I	Jog dial pulse input from the rotary encoder (for sound) in the TA-S9D (B phase input)
53	JOG2A	I	Jog dial pulse input from the rotary encoder (for sound) in the TA-S9D (A phase input)
54	JOG1B	I	Jog dial pulse input from the rotary encoder (for function) in the TA-S9D (B phase input)
55	JOG1A	I	Jog dial pulse input from the rotary encoder (for function) in the TA-S9D (A phase input)
56	VOLA	I	Jog dial pulse input from the rotary encoder (for volume) in the TA-S9D (A phase input)
57	VOLB	I	Jog dial pulse input from the rotary encoder (for volume) in the TA-S9D (B phase input)
58, 59	—	—	Not used (open)
60	I2C DATA	I/O	Communication data bus with the system controller (IC501) and DVP-S9
61	I2C CLK	I/O	Communication data reading clock signal input or transfer clock signal output with the system controller (IC501) and DVP-S9
62	AVCC FOR ANALOG	—	Power supply terminal (+3.3V) (for analog)
63	AVSS FOR ANALOG	—	Ground terminal (for analog)
64	KEY0	I	Key input terminal (A/D input) CLOCK/TIMER, TIMER SELECT, TUNER/BAND, TUNING +/–, ENTER, PRESET +/–, TUNER MEMORY, STEREO/MONO, PTY (S602 to S612) keys input PTY (S612) key: Used for the AEP and UK models
65	KEY1	I	Key input terminal for TA-S9D (A/D input)
66 to 76	—	—	Not used (open)
77	$\overline{\text{RESET}}$	I	Reset signal input from the system controller (IC501) "L": reset
78 to 80	—	—	Not used (open)
81	VSS FOR CPU	—	Ground terminal (for CPU)
82	XIN	I	System clock input terminal (4 MHz)
83	XOUT	O	System clock output terminal (4 MHz)
84	VCC FOR CPU	—	Power supply terminal (+3.3V)
85 to 91	—	—	Not used (open)
92 to 94	G12	O	Grid drive signal output to the fluorescent indicator tube (FL601)
95 to 98	G11 to G8	O	Grid drive signal output to the fluorescent indicator tube (FL601)
99, 100	G7	O	Grid drive signal output to the fluorescent indicator tube (FL601)

SECTION 6
EXPLODED VIEWS

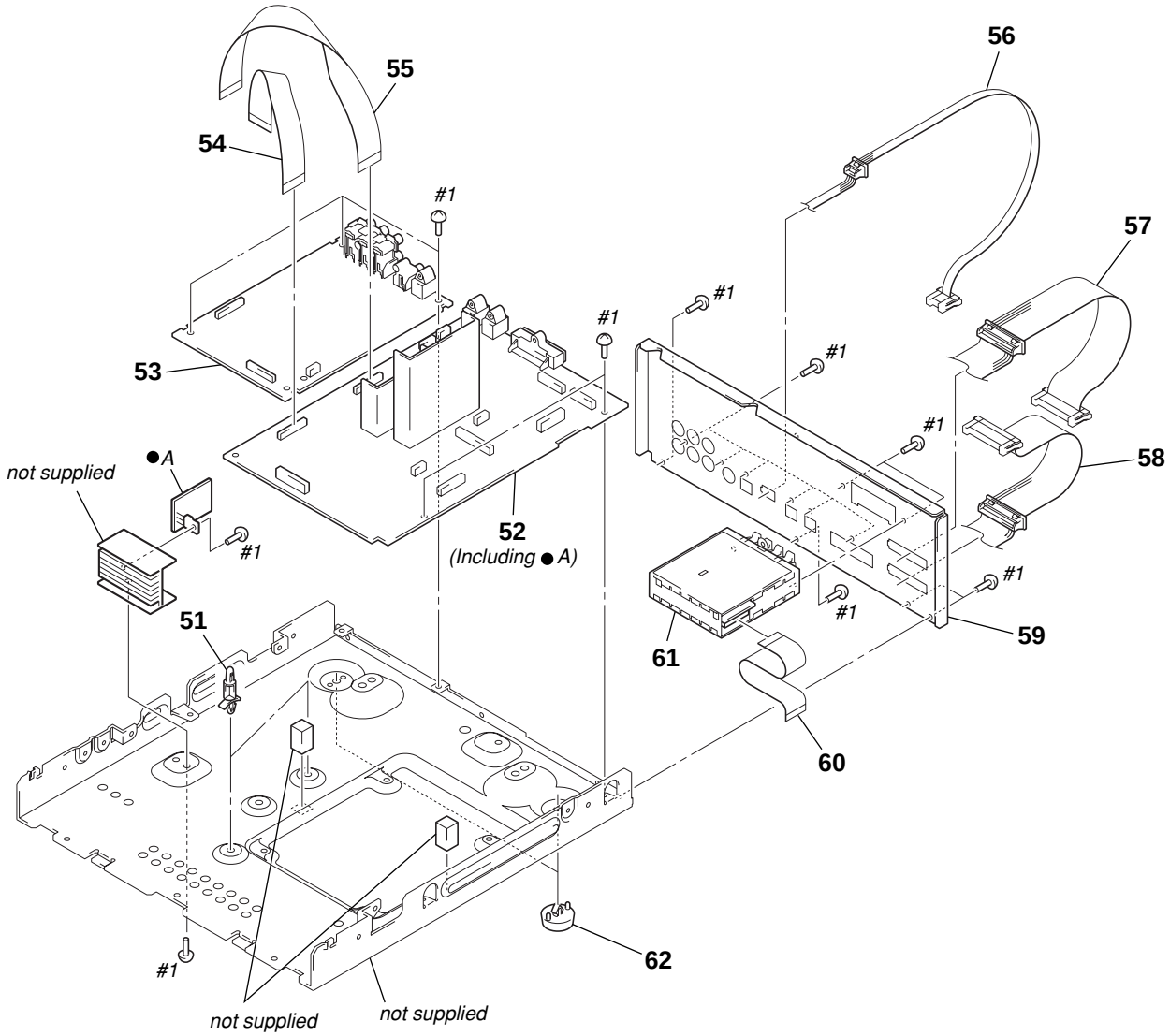
NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

6-1. CASE, FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4953-451-1	PANEL ASSY (ST), FRONT (AEP, UK)	
1	X-4953-452-1	PANEL ASSY (ST), FRONT	(AUS, EA, E, KR, MX, SP, TH)
2	1-773-114-11	WIRE (FLAT TYPE) (19 CORE)	
3	4-232-351-01	FILTER (FL)	
4	1-680-697-11	SIRCS BOARD	
5	4-951-620-01	SCREW (2.6X8), +BVTP	
6	A-4727-699-A	PANEL BOARD, COMPLETE (AEP, UK)	
6	A-4727-701-A	PANEL BOARD, COMPLETE (TH)	
6	A-4727-702-A	PANEL BOARD, COMPLETE	(AUS, EA, E, KR, MX, SP)
7	3-363-099-21	SCREW (CASE 3 TP2)	
8	4-233-134-31	CASE	
#1	7-685-646-79	SCREW +BVTP (3X8 TYPE2 N-S)	
#2	7-685-871-01	SCREW +BVTT (3X6 (S))	

6-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 51	4-924-098-01	HOLDER, PC BOARD	
52	A-4727-046-A	MAIN BOARD, COMPLETE (TH)	
52	A-4727-047-A	MAIN BOARD, COMPLETE (AEP, UK)	
52	A-4727-049-A	MAIN BOARD, COMPLETE (E, MX)	
52	A-4727-053-A	MAIN BOARD, COMPLETE (EA)	
52	A-4727-275-A	MAIN BOARD, COMPLETE (AUS, KR, SP)	
53	A-4727-694-A	DSP BOARD, COMPLETE (AUS, EA, E, KR, MX, SP)	
53	A-4727-696-A	DSP BOARD, COMPLETE (AEP, UK)	
53	A-4727-697-A	DSP BOARD, COMPLETE (TH)	
54	1-757-599-11	WIRE (FLAT TYPE) (21 CORE)	
55	1-757-600-11	WIRE (FLAT TYPE) (23 CORE)	
56	1-757-629-11	CORD (WITH CONNECTOR) 5P	
57	1-757-631-11	CORD (WITH CONNECTOR) 20P	
58	1-757-630-11	CORD (WITH CONNECTOR) 19P	

Ref. No.	Part No.	Description	Remark
59	4-232-349-01	PANEL (ST-DVD), BACK (AEP, UK)	
59	4-232-349-11	PANEL (ST-DVD), BACK (AUS)	
59	4-232-349-21	PANEL (ST-DVD), BACK (EA)	
59	4-232-349-31	PANEL (ST-DVD), BACK (E, SP)	
59	4-232-349-41	PANEL (ST-DVD), BACK (MX)	
59	4-232-349-51	PANEL (ST-DVD), BACK (TH)	
59	4-232-349-61	PANEL (ST-DVD), BACK (KR)	
60	1-769-940-11	WIRE (FLAT TYPE) (11 CORE) (AUS, EA, E, KR, MX, SP, TH)	
60	1-773-004-11	WIRE (FLAT TYPE) (15 CORE) (AEP, UK)	
61	1-693-529-11	TUNER (FM/AM) (AEP, UK)	
61	1-693-531-71	TUNER (FM/AM) (AUS, EA, E, MX, SP, TH)	
61	1-693-538-11	TUNER (FM/AM) (KR)	
62	4-965-822-01	FOOT	
#1	7-685-646-79	SCREW +BVTP (3X8 TYPE2 N-S)	

SECTION 7
ELECTRICAL PARTS LIST

DSP

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-4727-694-A	DSP BOARD, COMPLETE (AUS, EA, E, KR, MX, SP)			
	A-4727-696-A	DSP BOARD, COMPLETE (AEP, UK)			
	A-4727-697-A	DSP BOARD, COMPLETE (TH)			
		**********			
		< CAPACITOR/RESISTOR >			
C601	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C603	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C604	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C605	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C606	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C607	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C610	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C611	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C613	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-126-934-11	ELECT	220uF	20%	10V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C618	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C619	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C620	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C621	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C622	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C623	1-126-934-11	ELECT	220uF	20%	10V
C624	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C625	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C626	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C627	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C628	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C629	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C630	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C631	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C632	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C633	1-126-934-11	ELECT	220uF	20%	10V
C634	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C635	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C636	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C637	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C638	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C639	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C640	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C641	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C642	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C643	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C644	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C645	1-126-934-11	ELECT	220uF	20%	10V
C646	1-216-809-11	METAL CHIP	100	5%	1/16W
C647	1-126-934-11	ELECT	220uF	20%	10V
C648	1-126-934-11	ELECT	220uF	20%	10V
C649	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C650	1-126-934-11	ELECT	220uF	20%	10V
C651	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C652	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C653	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C654	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C655	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C656	1-126-934-11	ELECT	220uF	20%	10V
C657	1-216-809-11	METAL CHIP	100	5%	1/16W
C658	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C659	1-126-934-11	ELECT	220uF	20%	10V
C660	1-126-934-11	ELECT	220uF	20%	10V
C661	1-126-934-11	ELECT	220uF	20%	10V
C662	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C664	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C665	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C666	1-126-934-11	ELECT	220uF	20%	10V
C667	1-126-964-11	ELECT	10uF	20%	50V
C668	1-126-964-11	ELECT	10uF	20%	50V
C669	1-126-964-11	ELECT	10uF	20%	50V
C670	1-126-964-11	ELECT	10uF	20%	50V
C671	1-126-964-11	ELECT	10uF	20%	50V
C672	1-126-964-11	ELECT	10uF	20%	50V
C673	1-126-964-11	ELECT	10uF	20%	50V
C674	1-126-964-11	ELECT	10uF	20%	50V
C675	1-126-193-11	ELECT	1uF	20%	50V
C676	1-126-193-11	ELECT	1uF	20%	50V
C677	1-126-193-11	ELECT	1uF	20%	50V
C678	1-126-964-11	ELECT	10uF	20%	50V
C679	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C680	1-126-964-11	ELECT	10uF	20%	50V
C681	1-126-193-11	ELECT	1uF	20%	50V

Ref. No.	Part No.	Description			Remark
C682	1-126-193-11	ELECT	1uF	20%	50V
C683	1-126-193-11	ELECT	1uF	20%	50V
C684	1-126-964-11	ELECT	10uF	20%	50V
C685	1-126-964-11	ELECT	10uF	20%	50V
C686	1-126-933-11	ELECT	100uF	20%	16V
C687	1-126-933-11	ELECT	100uF	20%	16V
C689	1-126-933-11	ELECT	100uF	20%	16V
C690	1-126-934-11	ELECT	220uF	20%	10V
C691	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C692	1-136-165-00	MYLAR	0.1uF	5%	50V
C693	1-136-165-00	MYLAR	0.1uF	5%	50V
C694	1-136-165-00	MYLAR	0.1uF	5%	50V
C695	1-136-165-00	MYLAR	0.1uF	5%	50V
C696	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C697	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V
C699	1-126-964-11	ELECT	10uF	20%	50V
C700	1-126-964-11	ELECT	10uF	20%	50V
C701	1-126-193-11	ELECT	1uF	20%	50V
C702	1-126-960-11	ELECT	1uF	20%	50V
C703	1-126-960-11	ELECT	1uF	20%	50V
C704	1-126-961-11	ELECT	2.2uF	20%	50V
C705	1-126-964-11	ELECT	10uF	20%	50V
C706	1-126-964-11	ELECT	10uF	20%	50V
C707	1-126-964-11	ELECT	10uF	20%	50V
C708	1-126-964-11	ELECT	10uF	20%	50V
C709	1-126-964-11	ELECT	10uF	20%	50V
C710	1-126-964-11	ELECT	10uF	20%	50V
C711	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C712	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C713	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C714	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C715	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C716	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C717	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C719	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C720	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C721	1-126-934-11	ELECT	220uF	20%	10V
C722	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C723	1-126-964-11	ELECT	10uF	20%	50V
C724	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C725	1-126-964-11	ELECT	10uF	20%	50V
C726	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C727	1-126-964-11	ELECT	10uF	20%	50V
C728	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C729	1-126-964-11	ELECT	10uF	20%	50V
C730	1-126-964-11	ELECT	10uF	20%	50V
C731	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C732	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C733	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C734	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C735	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C736	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C738	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C739	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C740	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C741	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C742	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN601	1-506-469-11	PIN, CONNECTOR 4P			
CN602	1-779-289-11	CONNECTOR, FFC (LIF (NON-ZIF)) 21P			
CN603	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P			
		< DIODE/RESISTOR >			
D601	8-719-158-02	DIODE RD3.9SB2			
D604	8-719-988-61	DIODE 1SS355TE-17			
D605	8-719-988-61	DIODE 1SS355TE-17			
D606	1-216-864-11	METAL CHIP	0	5% 1/16W	
D607	8-719-058-24	DIODE RB501V-40TE-17 (EXCEPT AEP, UK)			
D608	8-719-058-24	DIODE RB501V-40TE-17 (EXCEPT AEP, UK)			
D609	8-719-058-24	DIODE RB501V-40TE-17 (EXCEPT AEP, UK)			
D610	8-719-058-24	DIODE RB501V-40TE-17 (EXCEPT AEP, UK)			
		< EARTH TERMINAL >			
* EP601	1-537-738-21	TERMINAL, EARTH			
* EP602	1-537-738-21	TERMINAL, EARTH			
* EP603	1-537-738-21	TERMINAL, EARTH			
* EP604	1-537-738-21	TERMINAL, EARTH			
		< RESISTOR/FERRITE BEAD >			
FB601	1-216-864-11	METAL CHIP	0	5% 1/16W	
FB602	1-216-864-11	METAL CHIP	0	5% 1/16W	
FB603	1-500-445-21	FERRITE	0uH		
FB604	1-216-864-11	METAL CHIP	0	5% 1/16W	
FB605	1-216-864-11	METAL CHIP	0	5% 1/16W	
FB606	1-216-805-11	METAL CHIP	47	5% 1/16W	
FB607	1-500-445-21	FERRITE	0uH		
FB608	1-500-445-21	FERRITE	0uH		
FB609	1-500-445-21	FERRITE	0uH		
		< IC >			
IC601	8-759-698-76	IC CXD9617R			
IC602	8-759-827-81	IC IS61LV6416-15T (T&R)			
IC603	8-759-238-47	IC TC74HCT7007AF (EL)			
IC604	8-759-825-15	IC LC89056W-E			
IC605	8-759-657-47	IC AK4527			
IC606	8-759-825-13	IC PCM1748E/2K			
IC607	8-749-018-85	IC M61512FP			
IC608	8-759-549-25	IC SN74LVU04APWR			
IC609	8-749-923-04	IC TOTX178A (OPTICAL OUT)			
IC610	8-759-835-63	IC NJM2391DL1-26-TE1			
		< JACK >			
J601	1-774-411-11	JACK, PIN 6P (VIDEO (AUDIO) IN, MD IN/OUT)			
J602	1-774-785-11	JACK, PIN 1P (SUB WOOFER OUT)			
		< JUMPER RESISTOR >			
JR601	1-216-864-11	METAL CHIP	0	5% 1/16W	
JR603	1-216-864-11	METAL CHIP	0	5% 1/16W	
JR620	1-216-864-11	METAL CHIP	0	5% 1/16W	
JR621	1-216-864-11	METAL CHIP	0	5% 1/16W	
JR622	1-216-864-11	METAL CHIP	0	5% 1/16W	
JR630	1-216-864-11	METAL CHIP	0	5% 1/16W	

DSP

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q601	8-729-801-93	TRANSISTOR	2SD1387		
Q602	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q603	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q604	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q605	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q606	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q607	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q608	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q609	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q610	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q611	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q612	8-729-113-69	TRANSISTOR	FN1F4M-M32		
Q613	8-729-113-14	TRANSISTOR	FA1A4M-T1L33		
		< RESISTOR >			
R601	1-216-809-11	METAL CHIP	100	5%	1/16W
R602	1-216-813-11	METAL CHIP	220	5%	1/16W
R603	1-216-809-11	METAL CHIP	100	5%	1/16W
R604	1-216-809-11	METAL CHIP	100	5%	1/16W
R605	1-216-809-11	METAL CHIP	100	5%	1/16W
R606	1-216-809-11	METAL CHIP	100	5%	1/16W
R607	1-216-809-11	METAL CHIP	100	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W
R610	1-216-809-11	METAL CHIP	100	5%	1/16W
R611	1-216-809-11	METAL CHIP	100	5%	1/16W
R612	1-216-809-11	METAL CHIP	100	5%	1/16W
R613	1-216-809-11	METAL CHIP	100	5%	1/16W
R614	1-216-809-11	METAL CHIP	100	5%	1/16W
R615	1-216-809-11	METAL CHIP	100	5%	1/16W
R616	1-216-809-11	METAL CHIP	100	5%	1/16W
R617	1-216-809-11	METAL CHIP	100	5%	1/16W
R618	1-216-809-11	METAL CHIP	100	5%	1/16W
R619	1-216-809-11	METAL CHIP	100	5%	1/16W
R620	1-216-809-11	METAL CHIP	100	5%	1/16W
R621	1-216-809-11	METAL CHIP	100	5%	1/16W
R623	1-216-833-11	METAL CHIP	10K	5%	1/16W
R628	1-216-809-11	METAL CHIP	100	5%	1/16W
R629	1-216-809-11	METAL CHIP	100	5%	1/16W
R630	1-216-809-11	METAL CHIP	100	5%	1/16W
R631	1-216-809-11	METAL CHIP	100	5%	1/16W
R632	1-216-809-11	METAL CHIP	100	5%	1/16W
R633	1-216-809-11	METAL CHIP	100	5%	1/16W
R634	1-216-809-11	METAL CHIP	100	5%	1/16W
R635	1-216-809-11	METAL CHIP	100	5%	1/16W
R636	1-216-809-11	METAL CHIP	100	5%	1/16W
R637	1-216-809-11	METAL CHIP	100	5%	1/16W
R638	1-216-809-11	METAL CHIP	100	5%	1/16W
R639	1-216-809-11	METAL CHIP	100	5%	1/16W
R640	1-216-809-11	METAL CHIP	100	5%	1/16W
R641	1-216-809-11	METAL CHIP	100	5%	1/16W
R642	1-216-809-11	METAL CHIP	100	5%	1/16W
R643	1-216-815-11	METAL CHIP	330	5%	1/16W
R644	1-216-815-11	METAL CHIP	330	5%	1/16W
R645	1-216-815-11	METAL CHIP	330	5%	1/16W
R646	1-216-815-11	METAL CHIP	330	5%	1/16W
R647	1-216-815-11	METAL CHIP	330	5%	1/16W
R648	1-216-815-11	METAL CHIP	330	5%	1/16W
R649	1-216-817-11	METAL CHIP	470	5%	1/16W
R650	1-216-817-11	METAL CHIP	470	5%	1/16W
R651	1-216-817-11	METAL CHIP	470	5%	1/16W
R652	1-216-817-11	METAL CHIP	470	5%	1/16W
R656	1-216-833-11	METAL CHIP	10K	5%	1/16W (TH)
R657	1-216-809-11	METAL CHIP	100	5%	1/16W
R658	1-216-809-11	METAL CHIP	100	5%	1/16W
R659	1-216-809-11	METAL CHIP	100	5%	1/16W
R660	1-216-815-11	METAL CHIP	330	5%	1/16W
R661	1-216-815-11	METAL CHIP	330	5%	1/16W
R662	1-216-809-11	METAL CHIP	100	5%	1/16W
R663	1-216-817-11	METAL CHIP	470	5%	1/16W
R664	1-216-809-11	METAL CHIP	100	5%	1/16W
R665	1-216-809-11	METAL CHIP	100	5%	1/16W
R666	1-216-809-11	METAL CHIP	100	5%	1/16W
R667	1-216-809-11	METAL CHIP	100	5%	1/16W
R668	1-216-809-11	METAL CHIP	100	5%	1/16W
R669	1-216-809-11	METAL CHIP	100	5%	1/16W
R670	1-216-809-11	METAL CHIP	100	5%	1/16W
R671	1-216-809-11	METAL CHIP	100	5%	1/16W
R672	1-216-809-11	METAL CHIP	100	5%	1/16W
R673	1-216-809-11	METAL CHIP	100	5%	1/16W
R674	1-216-809-11	METAL CHIP	100	5%	1/16W
R675	1-216-809-11	METAL CHIP	100	5%	1/16W
R676	1-216-809-11	METAL CHIP	100	5%	1/16W
R677	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R678	1-216-833-11	METAL CHIP	10K	5%	1/16W
R679	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R680	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R681	1-216-839-11	METAL CHIP	33K	5%	1/16W
R682	1-216-809-11	METAL CHIP	100	5%	1/16W
R683	1-216-809-11	METAL CHIP	100	5%	1/16W
R684	1-216-809-11	METAL CHIP	100	5%	1/16W
R685	1-216-809-11	METAL CHIP	100	5%	1/16W
R686	1-216-809-11	METAL CHIP	100	5%	1/16W
R687	1-216-809-11	METAL CHIP	100	5%	1/16W
R688	1-216-809-11	METAL CHIP	100	5%	1/16W
R689	1-216-821-11	METAL CHIP	1K	5%	1/16W
R690	1-216-857-11	METAL CHIP	1M	5%	1/16W
R691	1-216-815-11	METAL CHIP	330	5%	1/16W
R692	1-216-809-11	METAL CHIP	100	5%	1/16W
R693	1-216-821-11	METAL CHIP	1K	5%	1/16W
R694	1-216-821-11	METAL CHIP	1K	5%	1/16W
R695	1-216-809-11	METAL CHIP	100	5%	1/16W
R696	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R697	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R698	1-216-853-11	METAL CHIP	470K	5%	1/16W
R699	1-216-853-11	METAL CHIP	470K	5%	1/16W
R700	1-216-833-11	METAL CHIP	10K	5%	1/16W
R701	1-216-833-11	METAL CHIP	10K	5%	1/16W
R702	1-216-857-11	METAL CHIP	1M	5%	1/16W
R703	1-216-857-11	METAL CHIP	1M	5%	1/16W
R704	1-216-845-11	METAL CHIP	100K	5%	1/16W
R705	1-216-845-11	METAL CHIP	100K	5%	1/16W
R706	1-216-841-11	METAL CHIP	47K	5%	1/16W
R707	1-216-841-11	METAL CHIP	47K	5%	1/16W

DSP **MAIN**

Ref. No.	Part No.	Description			Remark
R709	1-216-864-11	METAL CHIP	0	5%	1/16W
R711	1-216-821-11	METAL CHIP	1K	5%	1/16W
R712	1-216-841-11	METAL CHIP	47K	5%	1/16W
R713	1-216-821-11	METAL CHIP	1K	5%	1/16W
R715	1-216-821-11	METAL CHIP	1K	5%	1/16W
R716	1-216-841-11	METAL CHIP	47K	5%	1/16W
R717	1-216-821-11	METAL CHIP	1K	5%	1/16W
R719	1-216-821-11	METAL CHIP	1K	5%	1/16W
R720	1-216-841-11	METAL CHIP	47K	5%	1/16W
R721	1-216-821-11	METAL CHIP	1K	5%	1/16W
R723	1-216-821-11	METAL CHIP	1K	5%	1/16W
R724	1-216-841-11	METAL CHIP	47K	5%	1/16W
R725	1-216-821-11	METAL CHIP	1K	5%	1/16W
R727	1-216-821-11	METAL CHIP	1K	5%	1/16W
R728	1-216-841-11	METAL CHIP	47K	5%	1/16W
R729	1-216-821-11	METAL CHIP	1K	5%	1/16W
R730	1-216-837-11	METAL CHIP	22K	5%	1/16W
R731	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R733	1-216-821-11	METAL CHIP	1K	5%	1/16W
R734	1-216-821-11	METAL CHIP	1K	5%	1/16W
R735	1-216-821-11	METAL CHIP	1K	5%	1/16W
R738	1-216-821-11	METAL CHIP	1K	5%	1/16W
R739	1-216-835-11	METAL CHIP	15K	5%	1/16W
R742	1-216-835-11	METAL CHIP	15K	5%	1/16W
R743	1-216-833-11	METAL CHIP	10K	5%	1/16W
R746	1-216-833-11	METAL CHIP	10K	5%	1/16W
R747	1-216-845-11	METAL CHIP	100K	5%	1/16W
R748	1-216-845-11	METAL CHIP	100K	5%	1/16W
R749	1-216-834-11	METAL CHIP	12K	5%	1/16W
R750	1-216-834-11	METAL CHIP	12K	5%	1/16W
R751	1-216-841-11	METAL CHIP	47K	5%	1/16W
R752	1-216-841-11	METAL CHIP	47K	5%	1/16W
R754	1-216-809-11	METAL CHIP	100	5%	1/16W
R755	1-216-809-11	METAL CHIP	100	5%	1/16W
R756	1-216-841-11	METAL CHIP	47K	5%	1/16W
R757	1-216-841-11	METAL CHIP	47K	5%	1/16W
R758	1-216-821-11	METAL CHIP	1K	5%	1/16W
R759	1-216-821-11	METAL CHIP	1K	5%	1/16W
R760	1-216-821-11	METAL CHIP	1K	5%	1/16W
R761	1-216-821-11	METAL CHIP	1K	5%	1/16W
R762	1-216-821-11	METAL CHIP	1K	5%	1/16W
R763	1-216-821-11	METAL CHIP	1K	5%	1/16W
R765	1-216-821-11	METAL CHIP	1K	5%	1/16W
R766	1-216-821-11	METAL CHIP	1K	5%	1/16W
R767	1-216-821-11	METAL CHIP	1K	5%	1/16W
R768	1-216-833-11	METAL CHIP	10K	5%	1/16W
R769	1-216-821-11	METAL CHIP	1K	5%	1/16W
R770	1-216-821-11	METAL CHIP	1K	5%	1/16W
R771	1-216-833-11	METAL CHIP	10K	5%	1/16W
R772	1-216-821-11	METAL CHIP	1K	5%	1/16W
R773	1-216-821-11	METAL CHIP	1K	5%	1/16W
R774	1-216-821-11	METAL CHIP	1K	5%	1/16W
R775	1-216-833-11	METAL CHIP	10K	5%	1/16W
R776	1-216-833-11	METAL CHIP	10K	5%	1/16W
R777	1-216-833-11	METAL CHIP	10K	5%	1/16W
R778	1-216-821-11	METAL CHIP	1K	5%	1/16W (EXCEPT AEP, UK)
R779	1-216-841-11	METAL CHIP	47K	5%	1/16W
R780	1-216-841-11	METAL CHIP	47K	5%	1/16W
R781	1-216-841-11	METAL CHIP	47K	5%	1/16W
		< VIBRATOR >			
X601	1-579-993-21	VIBRATOR, CERAMIC (13.5MHz)			
**********					
	A-4727-046-A	MAIN BOARD, COMPLETE (TH)			
	A-4727-047-A	MAIN BOARD, COMPLETE (AEP, UK)			
	A-4727-049-A	MAIN BOARD, COMPLETE (E, MX)			
	A-4727-053-A	MAIN BOARD, COMPLETE (EA)			
	A-4727-275-A	MAIN BOARD, COMPLETE (AUS, KR, SP)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C501	1-162-205-31	CERAMIC	18PF	5%	50V
C502	1-162-203-31	CERAMIC	15PF	5%	50V
C503	1-164-159-11	CERAMIC	0.1uF		50V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C505	1-104-656-11	ELECT	2200uF	20%	6.3V
C506	1-126-963-11	ELECT	4.7uF	20%	50V
C508	1-126-964-11	ELECT	10uF	20%	50V
C509	1-164-159-11	CERAMIC	0.1uF		50V
C510	1-126-963-11	ELECT	4.7uF	20%	50V
C551	1-126-964-11	ELECT	10uF	20%	50V
C552	1-164-159-11	CERAMIC	0.1uF		50V
C553	1-164-159-11	CERAMIC	0.1uF		50V
C561	1-164-159-11	CERAMIC	0.1uF		50V
C562	1-162-306-11	CERAMIC	0.01uF	30%	16V
C902	1-126-935-11	ELECT	470uF	20%	10V
C903	1-126-964-11	ELECT	10uF	20%	50V
C904	1-126-936-11	ELECT	3300uF	20%	16V
C905	1-126-935-11	ELECT	470uF	20%	16V
C906	1-164-159-11	CERAMIC	0.1uF		50V
C907	1-126-934-11	ELECT	220uF	20%	10V
C909	1-126-968-11	ELECT	100uF	20%	50V
C910	1-126-964-11	ELECT	10uF	20%	50V
C915	1-126-948-11	ELECT	100uF	20%	35V
C916	1-162-306-11	CERAMIC	0.01uF	30%	16V
C918	1-126-935-11	ELECT	470uF	20%	10V
C919	1-164-159-11	CERAMIC	0.1uF		50V
C927	1-161-494-00	CERAMIC	0.022uF		25V
C928	1-161-494-00	CERAMIC	0.022uF		25V
C937	1-164-159-11	CERAMIC	0.1uF		50V
C941	1-126-964-11	ELECT	10uF	20%	50V
C942	1-126-935-11	ELECT	470uF	20%	6.3V
C943	1-164-159-11	CERAMIC	0.1uF		50V
C952	1-128-548-11	ELECT	4700uF	20%	25V
C953	1-164-159-11	CERAMIC	0.1uF		50V
C955	1-162-306-11	CERAMIC	0.01uF	30%	16V
C956	1-126-964-11	ELECT	10uF	20%	50V
C957	1-162-306-11	CERAMIC	0.01uF	30%	16V
C961	1-164-159-11	CERAMIC	0.1uF		50V
C962	1-126-964-11	ELECT	10uF	20%	50V
C964	1-164-159-11	CERAMIC	0.1uF		50V
C966	1-162-306-11	CERAMIC	0.01uF	30%	16V

MAIN

Ref. No.	Part No.	Description			Remark
C968	1-162-306-11	CERAMIC	0.01uF	30%	16V
C970	1-162-306-11	CERAMIC	0.01uF	30%	16V
C971	1-164-159-11	CERAMIC	0.1uF		50V
C972	1-164-159-11	CERAMIC	0.1uF		50V
C977	1-126-964-11	ELECT	10uF	20%	50V
C978	1-126-964-11	ELECT	10uF	20%	50V
C993	1-126-964-11	ELECT	10uF	20%	50V
C994	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN501	1-506-469-11	PIN, CONNECTOR 4P			
CN502	1-784-780-11	CONNECTOR, FFC 19P			
* CN503	1-568-937-11	PIN, CONNECTOR 10P			
* CN505	1-569-624-11	SOCKET, CONNECTOR 17P (SYSTEM CONTROL 3)			
CN506	1-784-776-11	CONNECTOR, FFC 15P (AEP, UK)			
CN506	1-568-830-11	CONNECTOR, FFC 11P (EXCEPT AEP, UK)			
CN508	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P			
CN509	1-779-289-11	CONNECTOR, FFC (LIF (NON-ZIF)) 21P			
CN510	1-794-569-11	PIN, CONNECTOR 5P			
CN5031	1-794-569-11	PIN, CONNECTOR 5P			
CN5032	1-691-907-11	PIN, CONNECTOR 15P			
CN5041	1-580-176-11	PIN, CONNECTOR 10P			
* CN5042	1-568-419-11	PIN, CONNECTOR 9P			
		< DIODE >			
D551	8-719-911-19	DIODE	1SS199-25		
D552	8-719-911-19	DIODE	1SS199-25		
D901	8-719-500-56	DIODE	D3SBA20		
D902	8-719-024-99	DIODE	11ES2-NTA2B (AEP, UK)		
D903	8-719-024-99	DIODE	11ES2-NTA2B		
D904	8-719-024-99	DIODE	11ES2-NTA2B		
D911	8-719-024-99	DIODE	11ES2-NTA2B		
D912	8-719-110-72	DIODE	RDS30ESB2		
D913	8-719-109-89	DIODE	RDS5.6ESB2		
D920	8-719-024-99	DIODE	11ES2-NTA2B		
D921	8-719-911-19	DIODE	1SS199-25		
D922	8-719-024-99	DIODE	11ES2-NTA2B		
D923	8-719-024-99	DIODE	11ES2-NTA2B		
D924	8-719-050-84	DIODE	RB441Q-40T-77		
D941	8-719-911-19	DIODE	1SS199-25		
D942	8-719-911-19	DIODE	1SS199-25		
D943	8-719-911-19	DIODE	1SS199-25		
D944	8-719-911-19	DIODE	1SS199-25		
D945	8-719-911-19	DIODE	1SS199-25		
		< GROUND TERMINAL >			
EPT901	1-537-770-21	TERMINAL BOARD, GROUND			
EPT902	1-537-770-21	TERMINAL BOARD, GROUND			
		< IC >			
IC501	6-801-211-01	IC	M30622MGA-A77FP		
IC551	8-759-635-63	IC	M51943BSL		
IC901	8-759-158-62	IC	TA78057S		
IC903	8-759-473-41	IC	BA10T		
IC904	8-759-039-69	IC	uPC7805AHF		
IC951	8-749-923-05	IC	TORX178B (OPTICAL IN)		
IC952	8-749-923-05	IC	TORX178B (OPTICAL IN)		

Ref. No.	Part No.	Description			Remark
IC953	8-759-684-00	IC	BA8274K		
IC991	8-759-701-79	IC	NJM7812FA		
		< COIL >			
L14	1-408-080-00	INDUCTOR	100uH		
L951	1-410-525-11	INDUCTOR	220uH		
L955	1-410-682-31	INDUCTOR	470uH		
		< TRANSISTOR >			
Q502	8-729-422-57	TRANSISTOR	UN4111		
Q503	8-729-422-57	TRANSISTOR	UN4111		
Q551	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q901	8-729-140-97	TRANSISTOR	2SB734-34		
Q902	8-729-011-92	TRANSISTOR	2SC2001TP-K1K2		
		< RESISTOR >			
R44	1-247-807-31	CARBON	100	5%	1/4W
R92	1-247-807-31	CARBON	100	5%	1/4W
R501	1-247-807-31	CARBON	100	5%	1/4W
R502	1-247-807-31	CARBON	100	5%	1/4W
R503	1-247-807-31	CARBON	100	5%	1/4W
R504	1-247-807-31	CARBON	100	5%	1/4W
R505	1-247-807-31	CARBON	100	5%	1/4W
R506	1-247-807-31	CARBON	100	5%	1/4W
R507	1-247-807-31	CARBON	100	5%	1/4W
R508	1-249-429-11	CARBON	10K	5%	1/4W
R509	1-247-891-00	CARBON	330K	5%	1/4W
R510	1-249-411-11	CARBON	330	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-247-807-31	CARBON	100	5%	1/4W
R513	1-247-807-31	CARBON	100	5%	1/4W
R514	1-247-807-31	CARBON	100	5%	1/4W
R515	1-249-417-11	CARBON	1K	5%	1/4W
R516	1-247-807-31	CARBON	100	5%	1/4W
R517	1-247-807-31	CARBON	100	5%	1/4W
R518	1-247-807-31	CARBON	100	5%	1/4W
R519	1-249-429-11	CARBON	10K	5%	1/4W
R520	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-247-807-31	CARBON	100	5%	1/4W
R522	1-249-429-11	CARBON	10K	5%	1/4W
R523	1-247-807-31	CARBON	100	5%	1/4W
R524	1-249-437-11	CARBON	47K	5%	1/4W
R525	1-247-807-31	CARBON	100	5%	1/4W
R526	1-247-807-31	CARBON	100	5%	1/4W
R527	1-247-807-31	CARBON	100	5%	1/4W
R528	1-247-807-31	CARBON	100	5%	1/4W
R529	1-247-807-31	CARBON	100	5%	1/4W
R530	1-247-807-31	CARBON	100	5%	1/4W
R531	1-247-807-31	CARBON	100	5%	1/4W
R532	1-249-437-11	CARBON	47K	5%	1/4W
R533	1-247-807-31	CARBON	100	5%	1/4W
R534	1-247-807-31	CARBON	100	5%	1/4W
R535	1-247-807-31	CARBON	100	5%	1/4W
R536	1-247-807-31	CARBON	100	5%	1/4W
R537	1-247-807-31	CARBON	100	5%	1/4W
R538	1-247-807-31	CARBON	100	5%	1/4W
R539	1-247-807-31	CARBON	100	5%	1/4W
R540	1-247-807-31	CARBON	100	5%	1/4W

MAIN **PANEL**

Ref. No.	Part No.	Description			Remark
R541	1-249-437-11	CARBON	47K	5%	1/4W
R542	1-249-437-11	CARBON	47K	5%	1/4W
R543	1-249-415-11	CARBON	680	5%	1/4W
R544	1-249-425-11	CARBON	4.7K	5%	1/4W
R545	1-249-417-11	CARBON	1K	5%	1/4W (E, MX)
R545	1-249-425-11	CARBON	4.7K	5%	1/4W (AUS, EA, KR, SP, TH)
R545	1-249-429-11	CARBON	10K	5%	1/4W (AEP, UK)
R546	1-249-407-11	CARBON	150	5%	1/4W (AUS, KR, SP, TH)
R546	1-249-417-11	CARBON	1K	5%	1/4W (EA)
R546	1-249-425-11	CARBON	4.7K	5%	1/4W (E, MX)
R548	1-249-425-11	CARBON	4.7K	5%	1/4W
R549	1-247-843-11	CARBON	3.3K	5%	1/4W
R550	1-249-441-11	CARBON	100K	5%	1/4W
R551	1-249-413-11	CARBON	470	5%	1/4W
R552	1-249-429-11	CARBON	10K	5%	1/4W
R553	1-249-437-11	CARBON	47K	5%	1/4W
R554	1-249-437-11	CARBON	47K	5%	1/4W
R555	1-249-425-11	CARBON	4.7K	5%	1/4W
R556	1-249-437-11	CARBON	47K	5%	1/4W
R557	1-249-433-11	CARBON	22K	5%	1/4W
R558	1-247-903-00	CARBON	1M	5%	1/4W
⚠R903	1-219-153-11	FUSIBLE	10	5%	1/4W F
R904	1-249-429-11	CARBON	10K	5%	1/4W
R905	1-247-807-31	CARBON	100	5%	1/4W
R906	1-247-807-31	CARBON	100	5%	1/4W
R908	1-249-417-11	CARBON	1K	5%	1/4W
R911	1-249-409-11	CARBON	220	5%	1/4W
R912	1-249-442-11	CARBON	510	5%	1/4W
R941	1-249-417-11	CARBON	1K	5%	1/4W
R942	1-249-417-11	CARBON	1K	5%	1/4W
R943	1-247-843-11	CARBON	3.3K	5%	1/4W
R951	1-249-413-11	CARBON	470	5%	1/4W
R952	1-249-413-11	CARBON	470	5%	1/4W
R956	1-247-807-31	CARBON	100	5%	1/4W
R957	1-247-807-31	CARBON	100	5%	1/4W
R958	1-247-807-31	CARBON	100	5%	1/4W
R959	1-247-807-31	CARBON	100	5%	1/4W
R961	1-249-421-11	CARBON	2.2K	5%	1/4W
R962	1-249-421-11	CARBON	2.2K	5%	1/4W
R963	1-249-426-11	CARBON	5.6K	5%	1/4W
R964	1-249-426-11	CARBON	5.6K	5%	1/4W
		< VIBRATOR >			
X501	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			
X502	1-781-107-21	VIBRATOR, SERAMIC (16MHz)			
**********					
	A-4727-699-A	PANEL BOARD, COMPLETE (AEP, UK)			
	A-4727-701-A	PANEL BOARD, COMPLETE (TH)			
	A-4727-702-A	PANEL BOARD, COMPLETE (AUS, EA, E, KR, MX, SP)			
		**********			
	4-232-328-01	HOLDER, FL TUBE			
	4-949-935-41	CUSHION (FL)			
		< CAPACITOR >			
C601	1-162-306-11	CERAMIC	0.01uF	30%	16V
C603	1-164-159-11	CERAMIC	0.1uF		50V
C605	1-162-306-11	CERAMIC	0.01uF	30%	16V
C606	1-124-261-00	ELECT	10uF	20%	50V
C607	1-126-382-11	ELECT	100uF	20%	6.3V
C608	1-164-159-11	CERAMIC	0.1uF		50V
C610	1-124-261-00	ELECT	10uF	20%	50V
C614	1-162-286-31	CERAMIC	220PF	10%	50V
C615	1-162-286-31	CERAMIC	220PF	10%	50V
C649	1-162-306-11	CERAMIC	0.01uF	30%	16V
C650	1-162-306-11	CERAMIC	0.01uF	30%	16V
C651	1-162-282-31	CERAMIC	100PF	10%	50V
C652	1-162-282-31	CERAMIC	100PF	10%	50V
C653	1-162-282-31	CERAMIC	100PF	10%	50V
C654	1-162-282-31	CERAMIC	100PF	10%	50V
C655	1-162-282-31	CERAMIC	100PF	10%	50V
C656	1-162-282-31	CERAMIC	100PF	10%	50V
C657	1-162-282-31	CERAMIC	100PF	10%	50V
C658	1-162-282-31	CERAMIC	100PF	10%	50V
C659	1-162-282-31	CERAMIC	100PF	10%	50V
C660	1-162-282-31	CERAMIC	100PF	10%	50V
C661	1-162-282-31	CERAMIC	100PF	10%	50V
C662	1-162-282-31	CERAMIC	100PF	10%	50V
C663	1-162-306-11	CERAMIC	0.01uF	30%	16V
C664	1-164-159-11	CERAMIC	0.1uF		50V
C665	1-119-943-91	ELECT	47uF	20%	50V
C666	1-119-943-91	ELECT	47uF	20%	50V
C667	1-164-159-11	CERAMIC	0.1uF		50V
C668	1-164-159-11	CERAMIC	0.1uF		50V
C669	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN602	1-784-741-11	CONNECTOR, FFC 19P			
		< DIODE >			
D601	8-719-911-19	DIODE 1SS199-25			
		< FLUORESCENT INDICATOR TUBE >			
FL601	1-518-744-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC601	6-800-722-01	IC MB90M407PF-G-109-BND			
		< RESISTOR >			
R601	1-249-429-11	CARBON	10K	5%	1/4W
R602	1-249-429-11	CARBON	10K	5%	1/4W
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-247-807-31	CARBON	100	5%	1/4W
R605	1-247-807-31	CARBON	100	5%	1/4W
R606	1-249-429-11	CARBON	10K	5%	1/4W
R607	1-249-429-11	CARBON	10K	5%	1/4W
R608	1-249-429-11	CARBON	10K	5%	1/4W
R616	1-249-441-11	CARBON	100K	5%	1/4W
R617	1-249-410-11	CARBON	270	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

PANEL SIRCS

Ref. No.	Part No.	Description			Remark
R618	1-249-413-11	CARBON	470	5%	1/4W
R619	1-249-414-11	CARBON	560	5%	1/4W
R620	1-249-416-11	CARBON	820	5%	1/4W
R621	1-249-417-11	CARBON	1K	5%	1/4W
R622	1-249-418-11	CARBON	1.2K	5%	1/4W
R623	1-249-419-11	CARBON	1.5K	5%	1/4W
R624	1-249-421-11	CARBON	2.2K	5%	1/4W
R625	1-249-422-11	CARBON	2.7K	5%	1/4W
R626	1-249-424-11	CARBON	3.9K	5%	1/4W
R627	1-249-426-11	CARBON	5.6K	5%	1/4W (AEP, UK)
R628	1-249-429-11	CARBON	10K	5%	1/4W
R629	1-249-417-11	CARBON	1K	5%	1/4W
R630	1-249-429-11	CARBON	10K	5%	1/4W
R631	1-249-417-11	CARBON	1K	5%	1/4W
R632	1-249-429-11	CARBON	10K	5%	1/4W
R633	1-249-417-11	CARBON	1K	5%	1/4W
R634	1-249-429-11	CARBON	10K	5%	1/4W
R635	1-249-417-11	CARBON	1K	5%	1/4W
R636	1-249-429-11	CARBON	10K	5%	1/4W
R637	1-249-417-11	CARBON	1K	5%	1/4W
R638	1-249-429-11	CARBON	10K	5%	1/4W
R639	1-249-417-11	CARBON	1K	5%	1/4W
R677	1-249-417-11	CARBON	1K	5%	1/4W
		< SWITCH >			
S601	1-771-410-21	SWITCH, TACTILE (DISPLAY)			
S602	1-771-410-21	SWITCH, TACTILE (CLOCK/TIMER)			
S603	1-771-410-21	SWITCH, TACTILE (TIME SELECT)			
S604	1-771-410-21	SWITCH, TACTILE (TUNER/BAND)			
S605	1-771-410-21	SWITCH, TACTILE (TUNING +)			
S606	1-771-410-21	SWITCH, TACTILE (TUNING –)			
S607	1-771-410-21	SWITCH, TACTILE (ENTER)			
S608	1-771-410-21	SWITCH, TACTILE (PRESET –)			
S609	1-771-410-21	SWITCH, TACTILE (PRESET +)			
S610	1-771-410-21	SWITCH, TACTILE (TUNER MEMORY)			
S611	1-771-410-21	SWITCH, TACTILE (STEREO/MONO)			
S612	1-771-410-21	SWITCH, TACTILE (PTY) (AEP, UK)			
		< VIBRATOR >			
X601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
**********					
	1-680-697-11	SIRCS BOARD			
		**********			
		< CAPACITOR >			
C101	1-124-589-11	ELECT	47uF	20%	16V
		< IC >			
IC101	8-749-011-05	IC GP1U28X (REMOTE CONTROL RECEIVER)			
		< RESISTOR >			
R101	1-249-401-11	CARBON	47	5%	1/4W
R102	1-249-401-11	CARBON	47	5%	1/4W
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
2	1-773-114-11	WIRE (FLAT TYPE) (19 CORE)	
54	1-757-599-11	WIRE (FLAT TYPE) (21 CORE)	
55	1-757-600-11	WIRE (FLAT TYPE) (23 CORE)	
56	1-757-629-11	CORD (WITH CONNECTOR) 5P	
57	1-757-631-11	CORD (WITH CONNECTOR) 20P	
58	1-757-630-11	CORD (WITH CONNECTOR) 19P	
60	1-769-940-11	WIRE (FLAT TYPE) (11 CORE)	(AUS, EA, E, KR, MX, SP, TH)
60	1-773-004-11	WIRE (FLAT TYPE) (15 CORE) (AEP, UK)	
61	1-693-529-11	TUNER (FM/AM) (AEP, UK)	
61	1-693-531-71	TUNER (FM/AM) (AUS, EA, E, MX, SP, TH)	
61	1-693-538-11	TUNER (FM/AM) (KR)	

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.09	New

SS-S3/S9

SERVICE MANUAL

Ver 1.1 2002.07

Photo: SS-S3

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

- SS-S3 are speaker system in MHC-S3.
- SS-S9 are speaker system in MHC-S7AV, MHC-SV7AV.

SPECIFICATIONS

SS-S3/S9

Speaker system	3-way, 3-unit, bass-reflex type, magnetically shielded type
Speaker units	
Woofer:	15 cm, cone type
Subwoofer:	15 cm, cone type
Tweeter:	2.8 cm, dome type
Nominal impedance	6 ohms
Dimensions (w/h/d)	Approx. 235 x 470 x 265 mm
Mass	Approx. 7.3 kg net per speaker

Design and specifications are subject to change without notice.

SPEAKER SYSTEM

9-873-835-12
2002G0500-1
© 2002.07

Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

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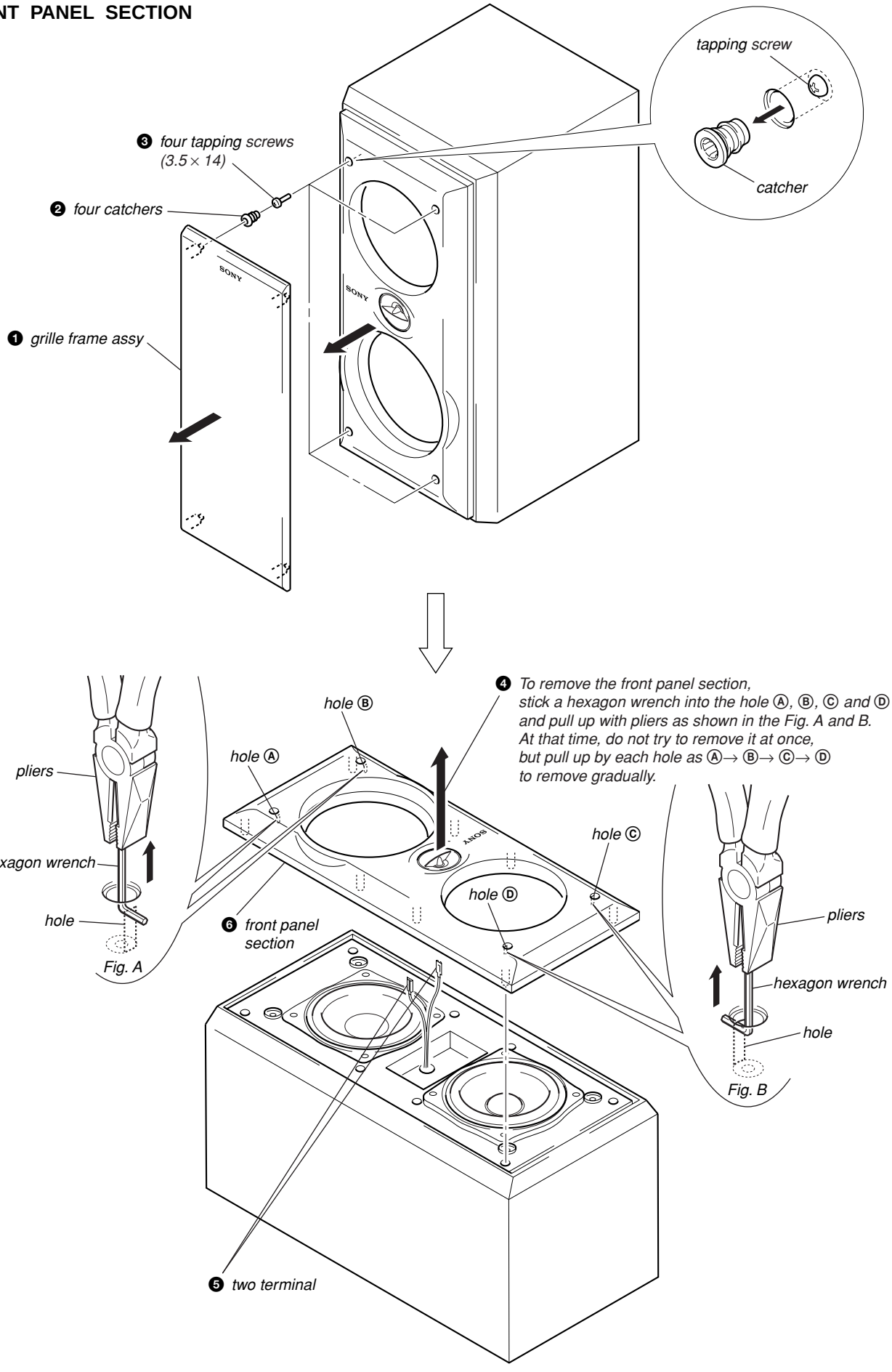
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

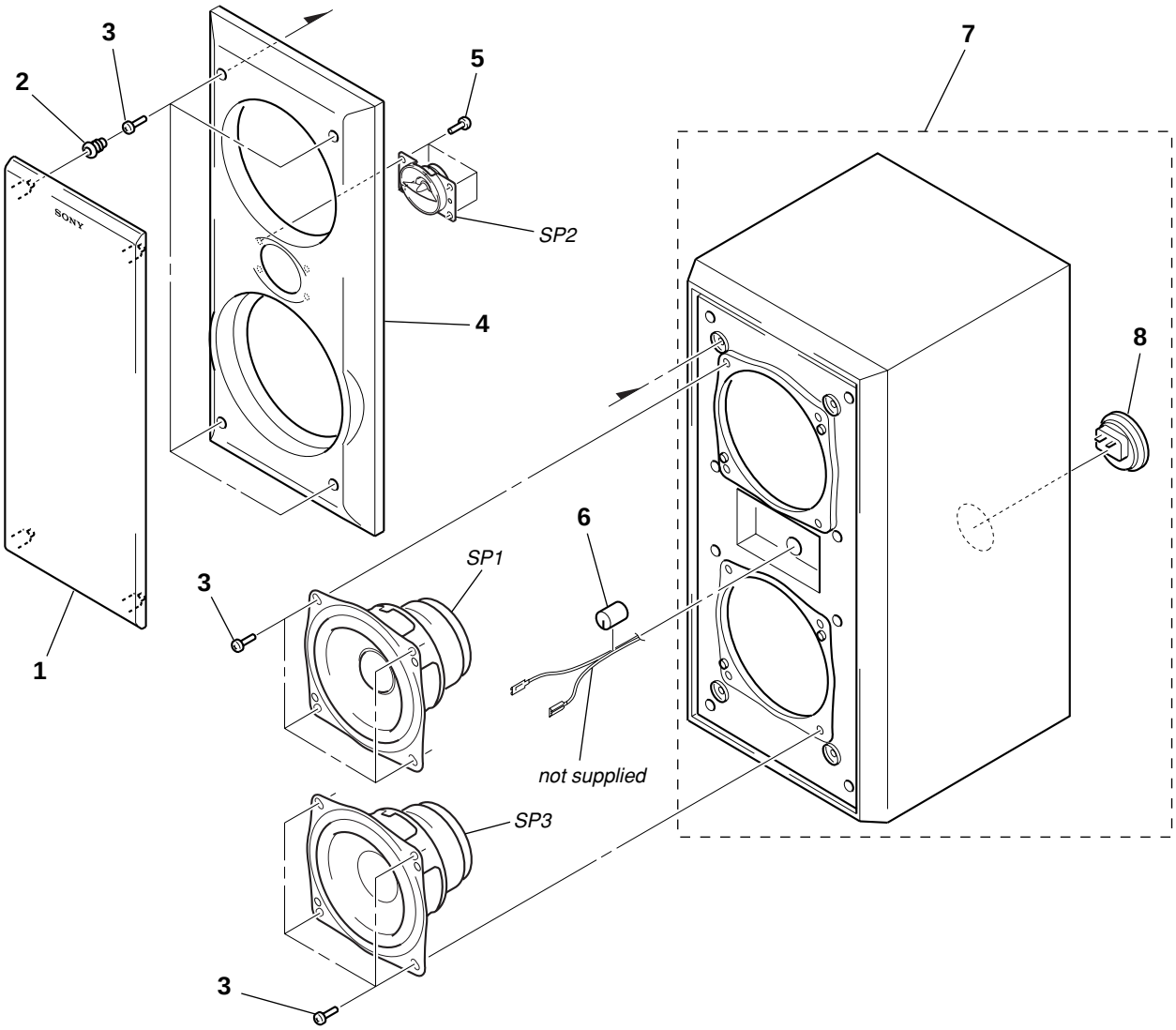
FRONT PANEL SECTION


tapping screw
catcher
❸ four tapping screws (3.5 × 14)
❷ four catchers
❶ grille frame assy
SONY
❹ To remove the front panel section, stick a hexagon wrench into the hole Ⓐ, Ⓑ, Ⓒ and Ⓓ and pull up with pliers as shown in the Fig. A and B. At that time, do not try to remove it at once, but pull up by each hole as Ⓐ→ Ⓑ→ Ⓒ→ Ⓓ to remove gradually.
hole Ⓑ
hole Ⓐ
hole Ⓒ
hole Ⓓ
pliers
hexagon wrench
hole
Fig. A
❻ front panel section
pliers
hexagon wrench
hole
Fig. B
❺ two terminal

EXPLODED VIEWS AND PARTS LIST

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color



Ref. No.	Part No.	Description	Remark
1	A-4412-719-A	FRAME ASSY, GRILLE	
2	4-912-253-01	CATCHER	
3	4-874-614-21	SCREW (4) (3.5X14), TAPPING	
4	A-4412-720-A	PANEL ASSY, FRONT (SS-S9)	
4	A-4412-887-A	PANEL ASSY, FRONT (SS-S3)	
5	4-874-614-31	SCREW (4) (3.5X12), TAPPING	
6	4-218-300-01	PACKING (B)	
7	A-4412-886-B	CABINET ASSY, SPEAKER	
8	1-537-332-11	TERMINAL BOARD	
SP1	1-529-979-11	SPEAKER (15cm) (WOOFER)	
SP2	1-529-980-11	SPEAKER (2.5cm) (TWEETER)	
SP3	1-529-978-11	SPEAKER (15cm) (SUB WOOFER)	

Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	1-558-848-11	CORD, SPEAKER	
	4-235-868-11	MANUAL, INSTRUCTION	
		(ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE, TURKISH, POLISH, HUNGARIAN, GREEK, FINNISH, DANISH, CZECH, RUSSIAN)	
		(AEP, UK)	

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.04	New
1.1	2002.07	Change of DISASSEMBLY of Front Panel Section. (SPM-02051)

SS-CT270/RC270/RS270

SERVICE MANUAL

Ver.1.0 2001.03

Photo: SS-RS270

Photo: SS-CT270

SS-RC270 is packaged name
(SS-RS270 and SS-CT270).

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

SPECIFICATION

SS-RS270

Speaker system	1-way, 1-unit, bass-reflex type
Speaker units	
Full-range	8 cm, cone type
Nominal impedance	8 ohms
Dimensions (w/h/d)	Approx. 180 x 95 x 100 mm
Mass	Approx. 0.65 kg net per speaker

SS-CT270

Speaker system	1-way, 2-unit, bass-reflex type magnetically shielded type
Speaker units	
Full-range	8 cm, cone type
Nominal impedance	8 ohms
Dimensions (w/h/d)	Approx. 225 x 95 x 100 mm
Mass	Approx. 1.2 kg net

Design and specifications are subject to change without notice.

SPEAKER SYSTEM

9-873-860-11
2001C0900-1
© 2001. 3

Sony Corporation
Audio Entertainment Group
General Engineering Dept.

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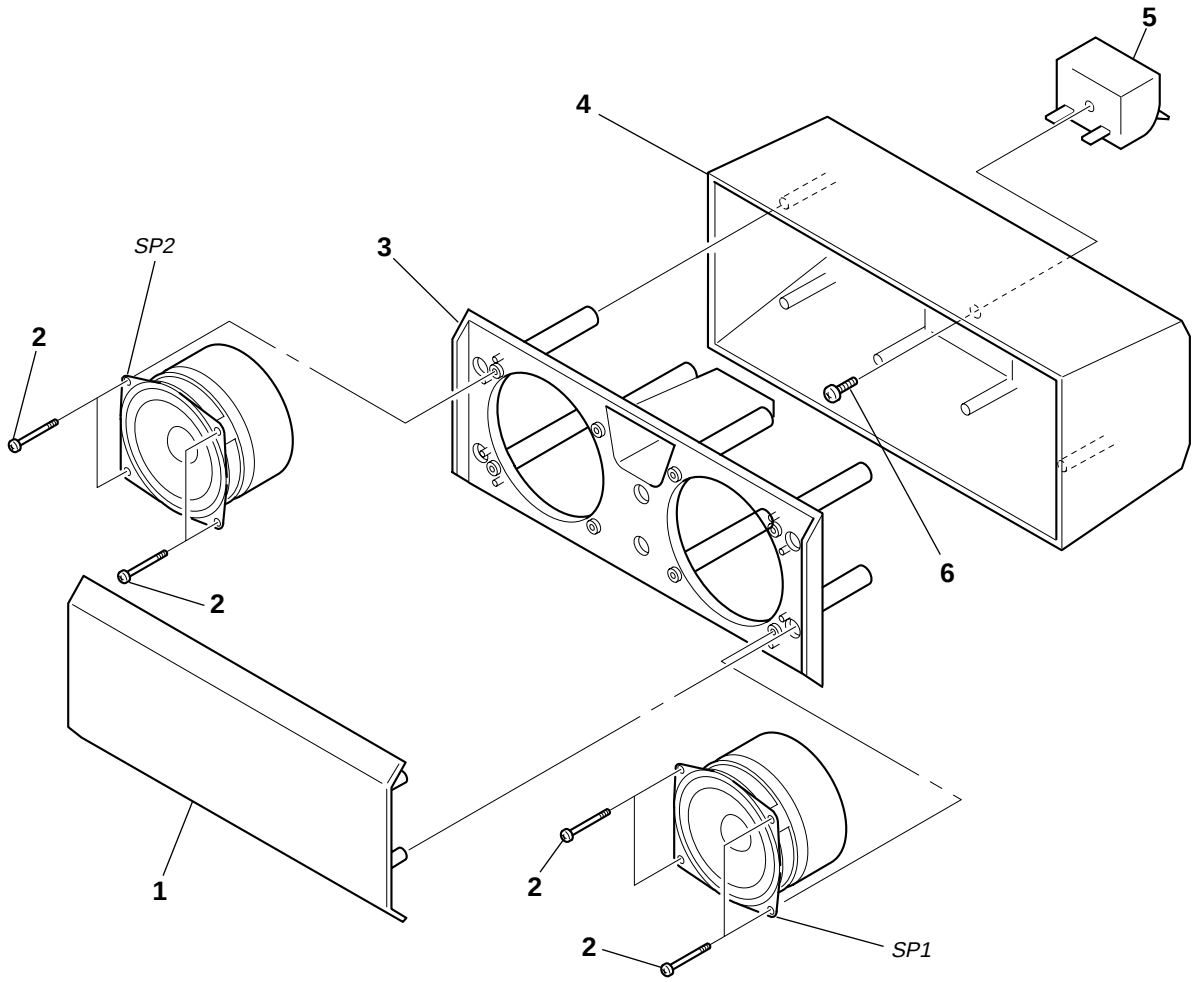
EXPLODED VIEW AND PARTS LIST

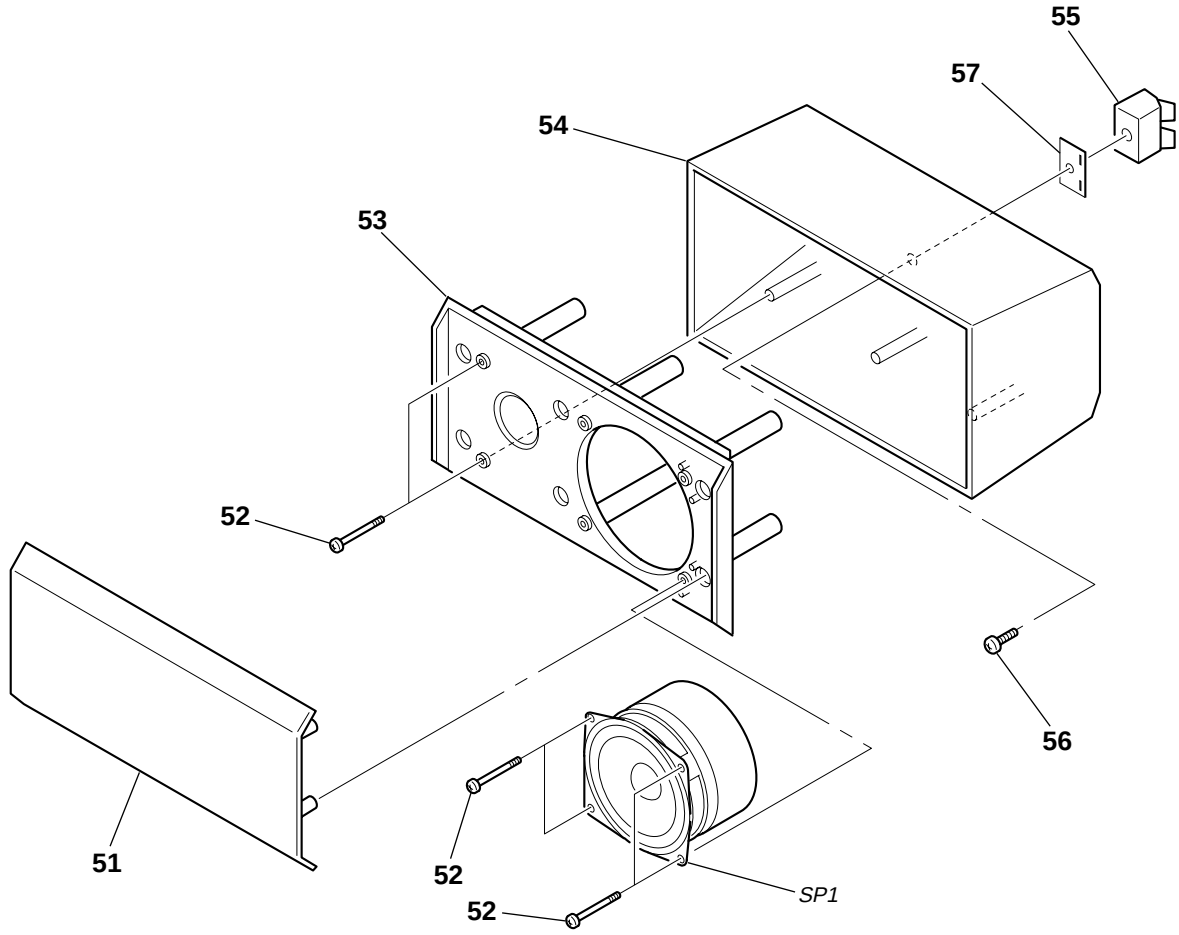
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.

• SS-CT270



Ref. No.	Part No.	Description	Remark
1	X-4953-893-1	FRAME ASSY, GRILLE	
2	4-978-600-01	SCREW	
3	4-221-063-11	PANEL, FRONT	
4	X-4953-852-1	CABINET ASSY	
5	1-537-775-12	TERMINAL BOARD	
6	7-685-661-29	SCREW +BVTP 4 X 12 TYPE2 SLIT	
SP1	1-529-983-11	SPEAKER (8CM)	
SP2	1-529-983-11	SPEAKER (8CM)	

• **SS-RS270**



Ref. No.	Part No.	Description	Remark
51	X-4953-892-1	FRAME ASSY, GRILLE	
52	4-978-600-01	SCREW	
53	4-232-595-01	PANEL, FRONT	
54	X-4953-876-1	CABINET ASSY	
55	1-694-516-11	TERMINAL, SPEAKER	
56	4-874-614-01	SCREW (4) (3.5 X 14), TAPPING	
57	4-229-803-11	PACKING	
SP1	1-529-982-11	SPEAKER (8CM)	

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.03	New

TA-S9D

SERVICE MANUAL

Ver 1.0 2001.09

AEP Model
UK Model
E Model
Australian Model

TA-S9D is the Amplifier section in MHC-S9D.

SPECIFICATIONS

Amplifier section

European model:
Front Speaker:
DIN power output (rated) 95 + 95 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 120 + 120 watts (6 ohms at 1 kHz, 10% THD)
Music power output (reference) 200 + 200 watts (6 ohms at 1 kHz, 10% THD)

Center Speaker:
DIN power output (rated) 30 watts (8 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 40 watts (8 ohms at 1 kHz, 10% THD)
Music power output (reference) 75 watts (8 ohms at 1 kHz, 10% THD)

Rear Speaker:
DIN power output (rated) 30 + 30 watts (8 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 40 + 40 watts (8 ohms at 1 kHz, 10% THD)
Music power output (reference) 75 + 75 watts (8 ohms at 1 kHz, 10% THD)

Other models:
The following measured at AC 120, 220, 240 V, 50/60 Hz
Front Speaker:
DIN power output (rated) 95 + 95 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 120 + 120 watts (6 ohms at 1 kHz, 10% THD)

Center Speaker:
DIN power output (rated) 30 watts (8 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 40 watts (8 ohms at 1 kHz, 10% THD)

Rear Speaker:
DIN power output (rated) 30 + 30 watts (8 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 40 + 40 watts (8 ohms at 1 kHz, 10% THD)

Inputs
VIDEO (AUDIO) IN: (phono jacks) voltage 250 mV, impedance 47 kilohms
MD IN: (phono jacks) voltage 450 mV, impedance 47 kilohms
OPTICAL IN: (Square optical connector jacks, rear panel)
MIC: (Except for North American and European models) (phone jack) sensitivity 1 mV, impedance 10 kilohms

Outputs
MD OUT: (phono jacks) voltage 250 mV, impedance 1 kilohms
VIDEO OUT: (phono jack) max. output level 1 Vp-p, unbalanced, Sync negative, load impedance 75 ohms
S-VIDEO OUT: (4-pin/mini-DIN jack) Y: 1 Vp-p, unbalanced, Sync negative, C: 0.286Vp-p, load impedance 75 ohms
PHONES: (stereo mini jack) accepts headphones of 8 ohms or more
FRONT SPEAKER: accepts impedance of 6 to 16 ohms
REAR SPEAKER: accepts impedance of 8 to 16 ohms
CENTER SPEAKER: accepts impedance of 8 to 16 ohms
SUB WOOFER OUT: Voltage 1 V, impedance 1 kilohms

General

Power requirements
European model: 230 V AC, 50/60 Hz
Australian model: 230 – 240 V AC, 50/60 Hz
Mexican model: 120 V AC, 60 Hz
Korean model: 220 V AC, 60 Hz
Thailand model: 220 V AC, 50/60 Hz
Other models: 120 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector

Power consumption
European model: 300 watts, 0.6 watts (at the Power Saving Mode)
Other models: 300 watts

Dimensions (w/h/d) Approx. 280 x 128 x 350 mm

Mass Approx. 7.7 kg

Design and specifications are subject to change without notice.

A/V AMPLIFIER

9-873-282-01
2001I0500-1
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Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

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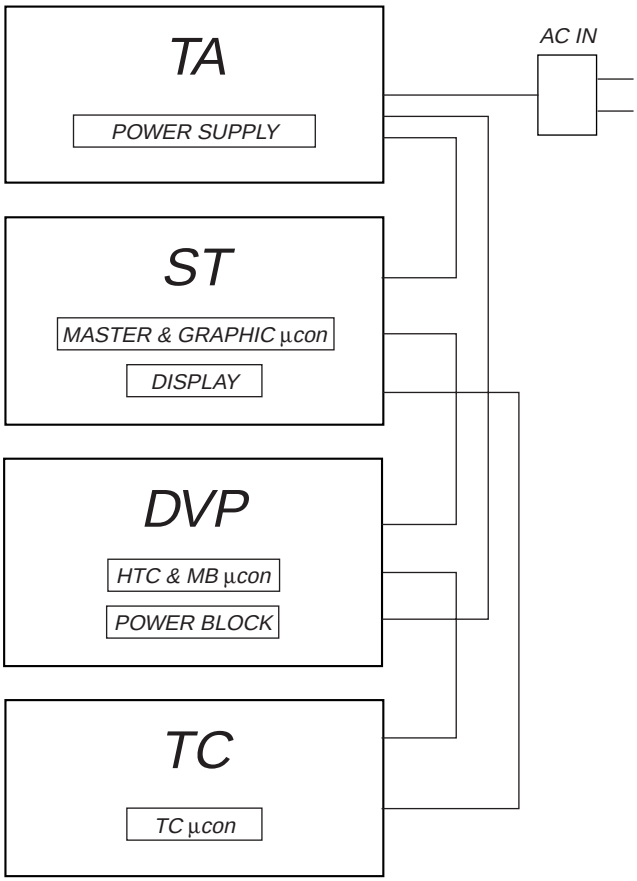
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
SERVICING NOTES

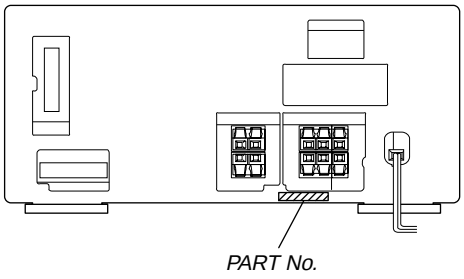
This set is a component of the MHC-S9D.
The MHC-S9D system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.
In performing the repair, connect all components with the system cables.
Note: The precaution to the users is described on the label stuck on the back panel (DVD/video CD/CD player) and in the trouble-shooting section in the Operation Manual.

System Configuration:



MODEL IDENTIFICATION

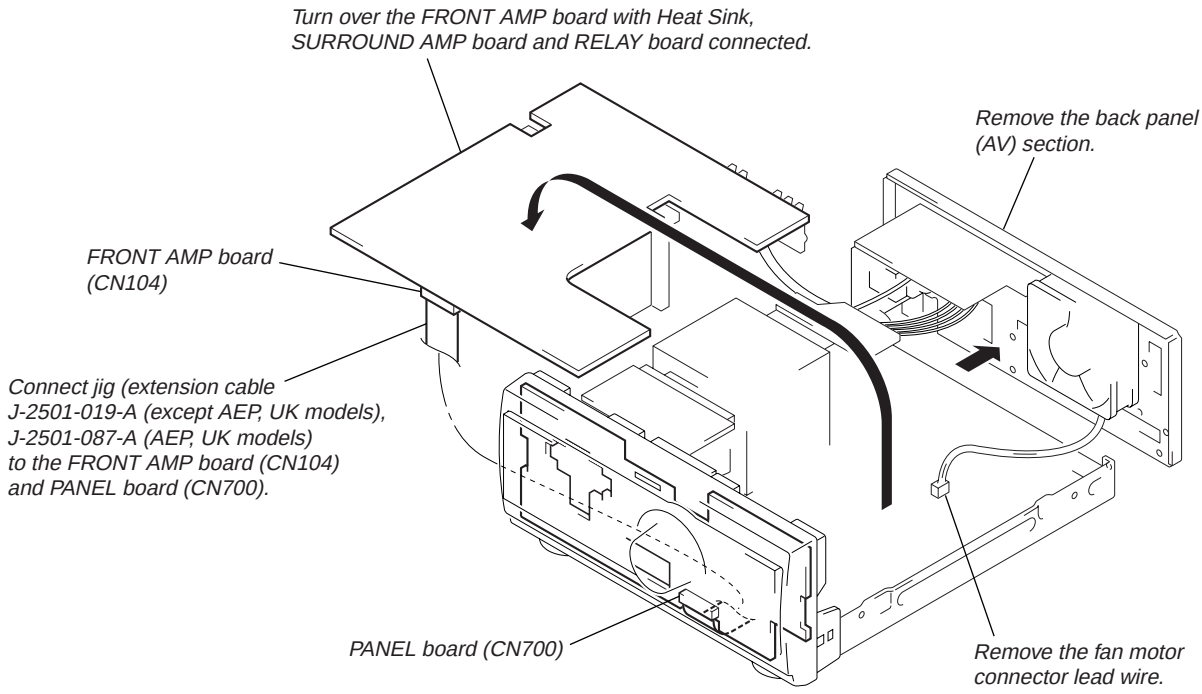
– Back Panel –



Model	PART No.
AEP, UK models	4-232-348-0□
Singapore model	4-232-348-4□
Saudi Arabia model	4-232-348-5□
Australian model	4-232-348-6□
Thai model	4-232-348-7□
E model	4-232-348-8□
Mexican model	4-232-348-9□
Korean model	4-233-563-0□

FRONT AMP BOARD SERVICE POSITION

In checking the FRONT AMP board, prepare jig
(extension cable J-2501-019-A: 1.25 mm Pitch, 25 core, Length 300 mm) (except AEP, UK models)
(extension cable J-2501-087-A: 1.25 mm Pitch, 23 core, Length 300 mm) (AEP, UK models)
(Fig A)


Turn over the FRONT AMP board with Heat Sink, SURROUND AMP board and RELAY board connected.
Remove the back panel (AV) section.
FRONT AMP board (CN104)
Connect jig (extension cable J-2501-019-A (except AEP, UK models), J-2501-087-A (AEP, UK models) to the FRONT AMP board (CN104) and PANEL board (CN700).
PANEL board (CN700)
Remove the fan motor connector lead wire.

(Fig A)

SECTION 2
GENERAL

This section is extracted from instruction manual.

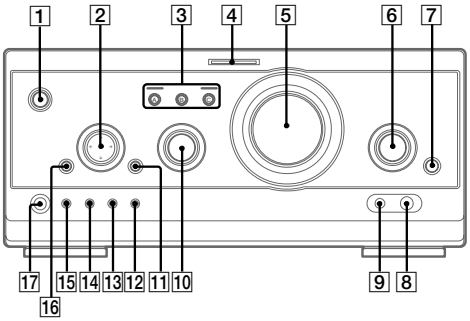
Parts Identification

The items are arranged in alphabetical order.

Refer to the pages indicated in parentheses ( ) for details.

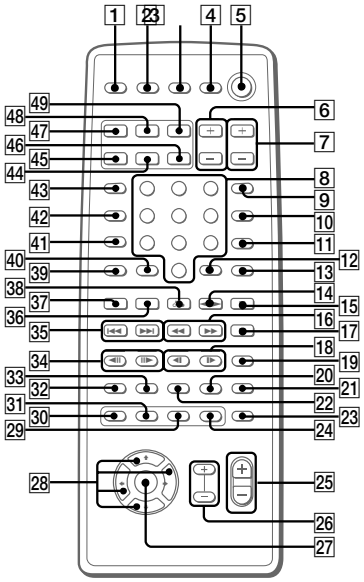
Main unit

A/V amplifier



CINEMA STUDIO A–C 3 (49)
DIGITAL 7 (57, 63)
DVD MENU 14 (27)
ENTER/↑/↓/←/→ 2
EQ 11 (52)
EQ ON/OFF 12 (13, 53)
FILE SELECT 10 (26, 48, 49, 53)
FUNCTION 6 (12, 13, 25, 27, 28, 36, 45, 46, 55, 57, 62)
MIC jack (Except for European model) 9 (54)
MIC LEVEL (Except for European model) 8 (54)
MULTI CHANNEL DECODING indicator 4 (50)
PHONES jack 17
SET UP 13 (14, 16, 51, 53, 54)
SUR 16 (51)
TITLE 15 (27)
VOLUME 5
I/⏻ (power) 1 (12, 13, 63)

Remote control



ANGLE 32 (37)
AUDIO 22 (34)
CLEAR 12 (22, 29, 30, 36)
CLOCK/TIMER SELECT 3 (47, 56)
CLOCK/TIMER SET 2 (17, 47, 56)
DBFB 41 (48)
D.SKIP 9 (26)
DIGITAL 44 (57)
DISPLAY 47 (17, 31, 32, 43, 54)
DVD DISPLAY 23 (18, 19, 30, 32–34, 36–40)
DVD MENU 21 (27)
DVD SET UP 19 (18, 19, 24, 39)
ENTER 27
EQ 31 (52)
EQ ON/OFF 29 (53)
FILE SELECT +/– 26 (48, 49, 53)
FUNCTION 43 (18, 25, 27, 28, 36, 45, 46, 55, 57)
GROOVE 42 (48)
KARAOKE PON (Except for European model) 39 (54)
MD 46 (57)
Numeric buttons 8 (28, 30)
PLAY MODE 11 (25, 28, 29, 46)
REPEAT 10 (30)
RETURN ↩ 13 (27, 39, 40)
SELECT DVD ► 36 (20, 25, 27, 29, 30)
SET UP 24 (14, 16, 51, 53, 54)
SLEEP 1 (55)
SLOW ◄I/I► 18 (26)
SPECTRUM ANALYZER 48 (54)
STEP ◄II/II► 34 (26)
SUBTITLE 33 (37)
SUR 30 (51)
TAPE A ◄► 38 (44)
TAPE B ◄► 14 (44, 45)
TITLE 20 (27)
TUNER/BAND 37 (42)
TV I/⏻ 4 (13)
TV CH +/– 7 (13)
TV/VIDEO 49 (13)
TV VOL +/– 6 (13)
VIDEO 45 (57)
VOL +/– 25

BUTTON DESCRIPTIONS

I/⏻ (power) 5
II (pause) 17
■ (stop) 15
◄◄/►► (rewind/fast forward), TUNING –/+ 16
I◄◄/►►I (go back/go forward), PRESET –/+, PREV/NEXT 35
↑/↓/←/→ 28
>10 40

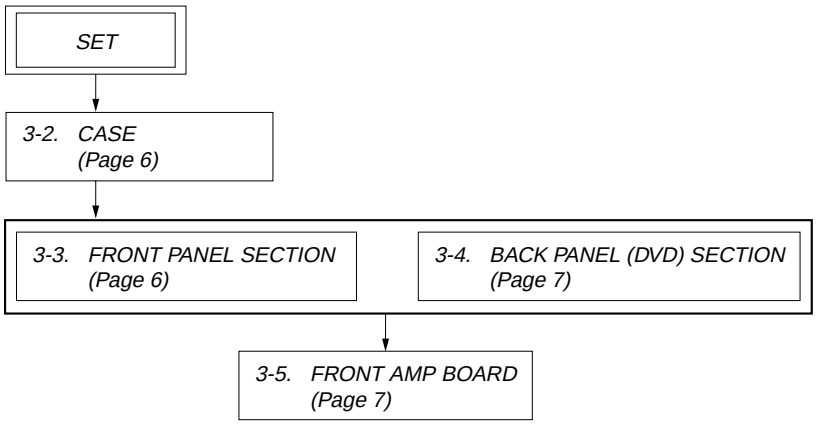
SECTION 3
DISASSEMBLY

• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

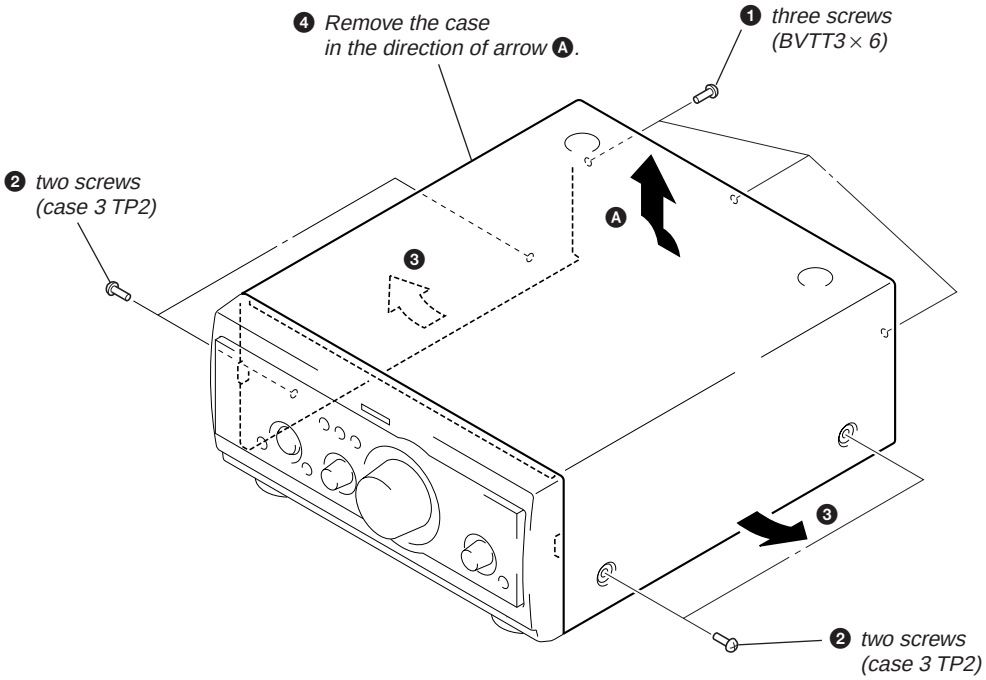
Note 1: *The process described in ⊟ can be performed in any order.*

Note 2: *Without completing the process described in ⊟, the next process can not be performed.*

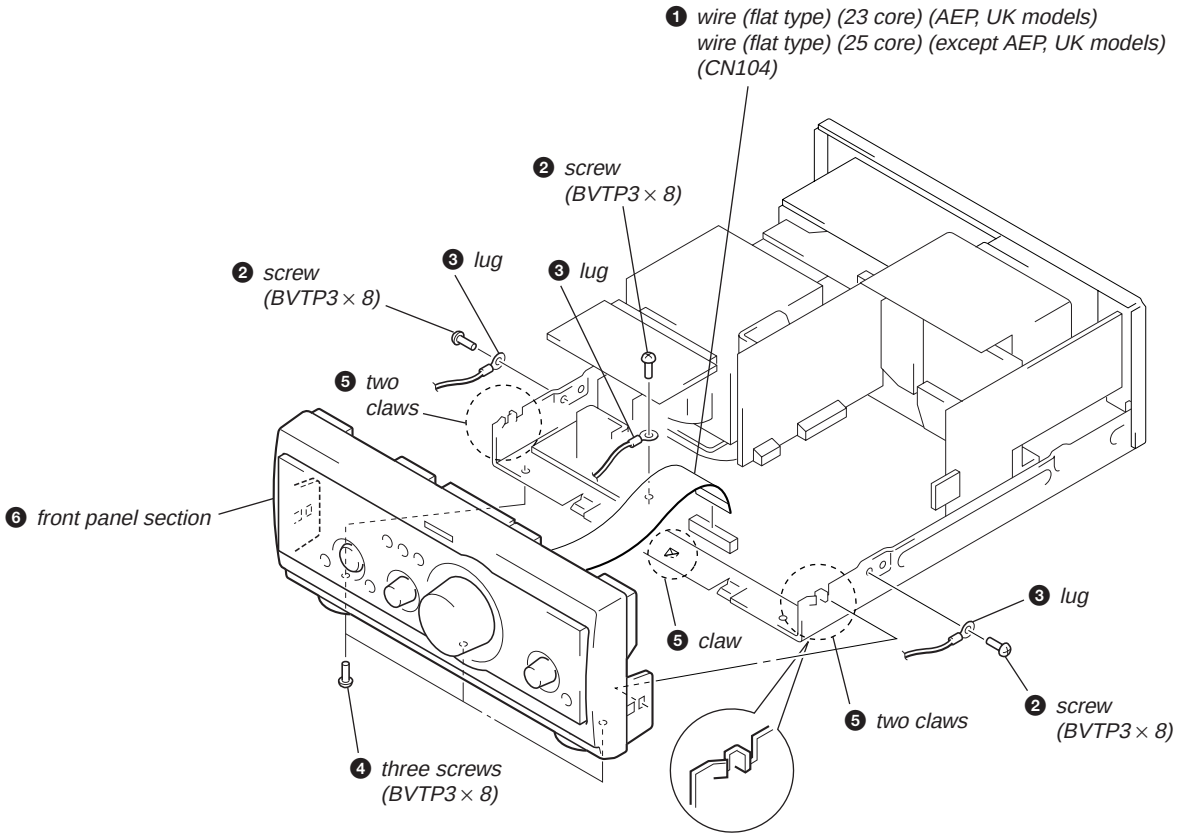


Note: Follow the disassembly procedure in the numerical order given.

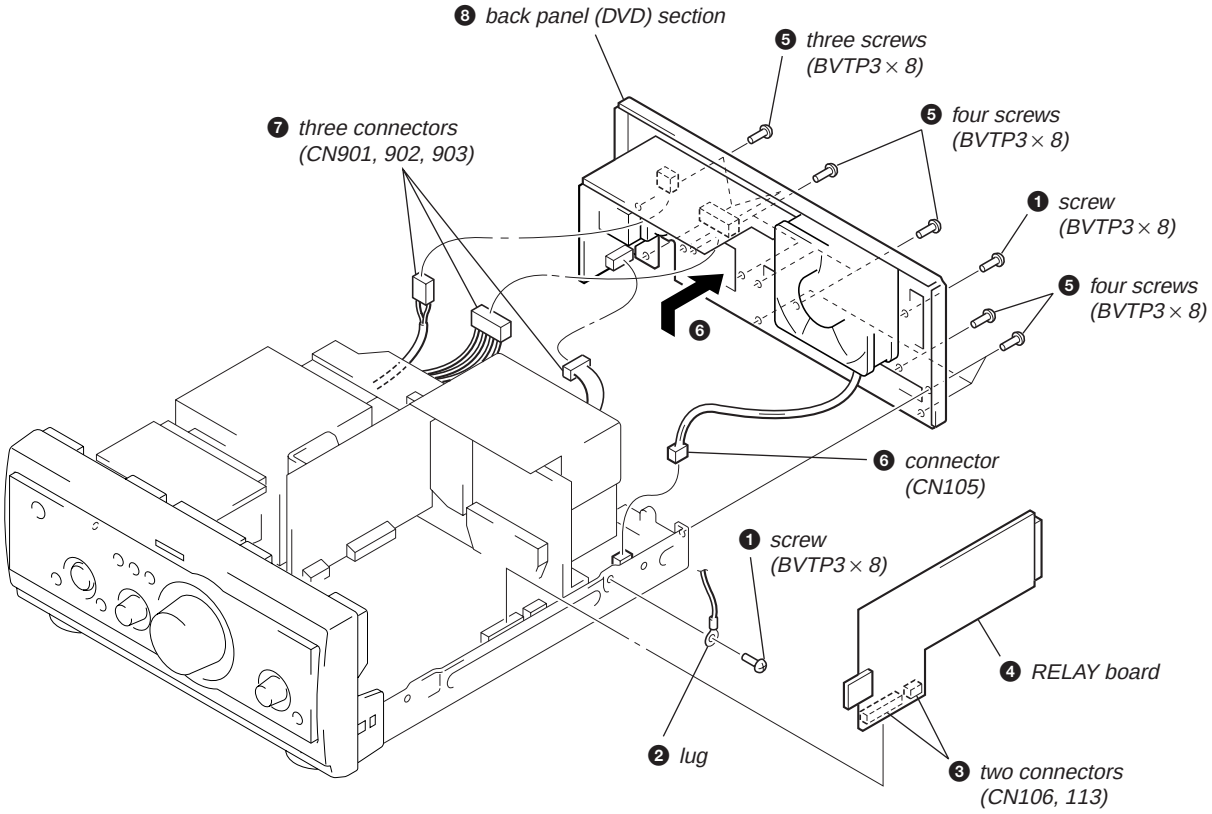
3-2. CASE



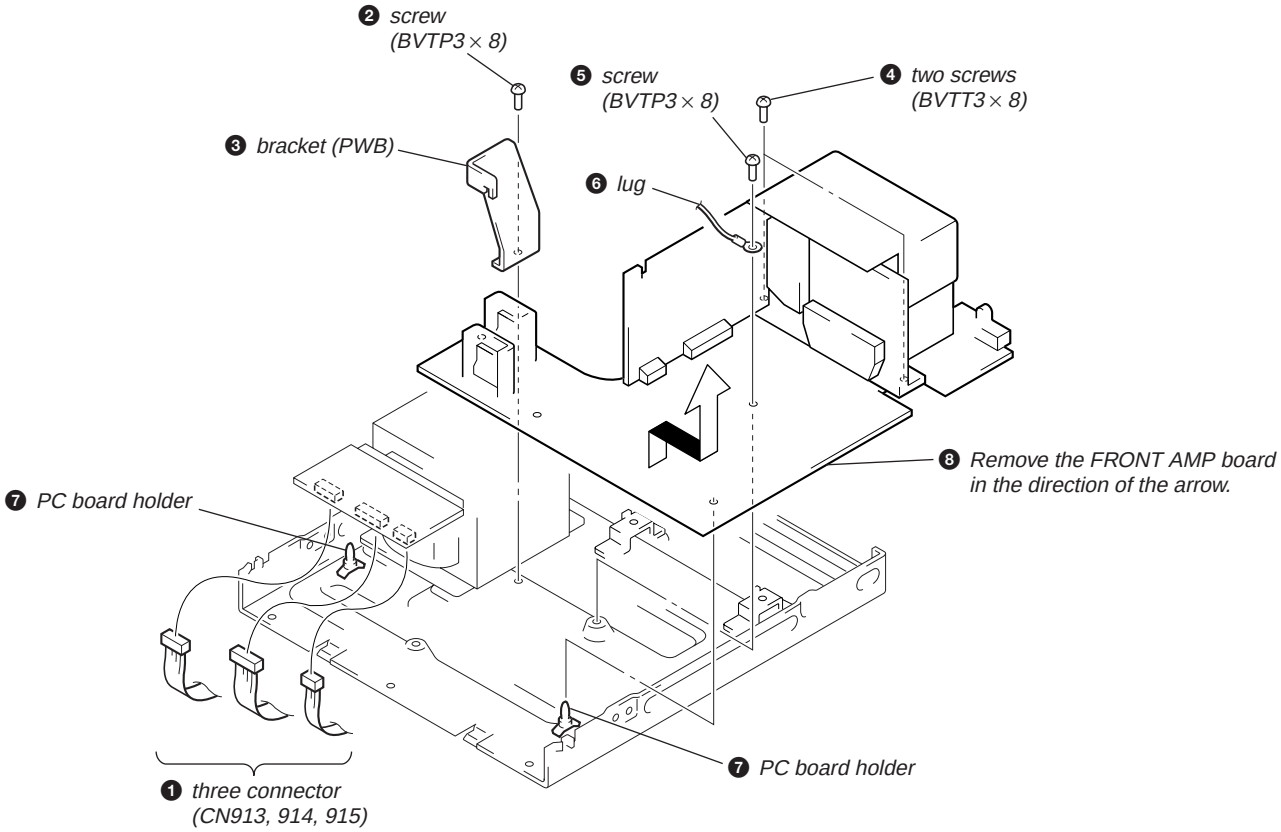
3-3. FRONT PANEL SECTION


❶ wire (flat type) (23 core) (AEP, UK models)
wire (flat type) (25 core) (except AEP, UK models)
(CN104)
❷ screw (BVTP3 × 8)
❷ screw (BVTP3 × 8)
❸ lug
❸ lug
❺ two claws
❻ front panel section
❸ lug
❺ claw
❺ two claws
❷ screw (BVTP3 × 8)
❹ three screws (BVTP3 × 8)

3-4. BACK PANEL (DVD) SECTION


❽ back panel (DVD) section
❺ three screws (BVTP3 × 8)
❼ three connectors (CN901, 902, 903)
❺ four screws (BVTP3 × 8)
❶ screw (BVTP3 × 8)
❺ four screws (BVTP3 × 8)
❻
❻ connector (CN105)
❶ screw (BVTP3 × 8)
❹ RELAY board
❷ lug
❸ two connectors (CN106, 113)

3-5. FRONT AMP BOARD


❷ screw (BVTP3 × 8)
❺ screw (BVTP3 × 8)
❹ two screws (BVTT3 × 8)
❸ bracket (PWB)
❻ lug
❽ Remove the FRONT AMP board in the direction of the arrow.
❼ PC board holder
❼ PC board holder
❶ three connector (CN913, 914, 915)

SECTION 4
TEST MODE

Note: Use following buttons in the test mode.
no mark : Button of amplifier unit (TA-S9D)
*1 : Button of tuner unit (ST-S9)
*2 : Button of DVD/video CD/CD player unit (DVP-S9)

[MC Test Mode]

Enter the MC Test Mode

1. Press the I/⏻ button to turn the power on.
2. While pressing the both STEREO/MONO *1 and CINEMA STUDIO C buttons, press the CINEMA STUDIO A button.
3. "GROOVE" indication blinks on the fluorescent indicator tube in the midst of MC test mode.
4. This mode has two modes (mode 1/mode 2).
5. To change the modes, press three buttons in the same manner as entering this mode (step 2). Each time the step 2 operation is repeated, it changes modes alternately.
6. To distinguish the mode, turn the VOLUME knob clockwise or counterclockwise. Then display is shown as follows.
   Mode 1: only "MIN" or "MAX"
   Mode 2: "MIN", "1 to 30" or "MAX"

AMP Test Mode

In the AMP test mode, it operates as follows.

- VOLUME knob is turned, it changes display as follows.
  Counterclockwise : VOLUME MIN
  Clockwise : VOLUME MAX
- FILE SELECT knob is turned, it changes speaker output mode as follows.

Display of each mode:

Mode No.	Display	
1	L: L	R: R
2	L: SL	R: SR
3	L: LSLC	R: RSRW
4	L: LSLC	R: RSRW
5	L: C	R: W

Details of each mode:

Mode 1 : L-CH : front L-CH
R-CH : front R-CH
Mode 2 : L-CH : rear L-CH
R-CH : rear R-CH
Mode 3 : L-CH : front L-CH, rear L-CH, center
R-CH : front R-CH, rear R-CH, sub woofer
(no LFE, "EQ" indication does not light up on the fluorescent indicator tube of tuner unit)
Mode 4 : L-CH : front L-CH, rear L-CH, center
R-CH : front R-CH, rear R-CH, sub woofer
(LFE on, "EQ" indication lights up on the fluorescent indicator tube of tuner unit)
Mode 5 : L-CH : center
R-CH : sub woofer

Releasing the MC Test Mode

To release from this mode, press the I/⏻ button or disconnect the power cord.

[GC Test Mode]

Enter the GC Test Mode

Procedure 1:

1. Press the I/⏻ button to turn the power on.
2. While pressing the both STEREO/MONO *1 and CINEMA STUDIO C buttons, press the CLOCK/TIMER *1 button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Procedure 2:

1. Press the I/⏻ button to turn the power on.
2. While pressing the both PLAY MODE *2 and ■ *2 buttons, press the ⏏ (DISC 1) *2 button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Version Display Mode

Procedure:

1. Enter the GC test mode.
2. Each time the TUNER MEMORY *1 or DISC 1 *2 button is pressed, microcomputer or mechanism deck version is displayed of each unit.
3. Press the TUNING + *1 or DISC 3 *2 button to detail is displayed the version.

Key Check Mode

Procedure:

1. Enter the GC test mode.
2. Press the TUNING – *1 or DISC 2 *2 button to set the key check mode.
3. In the key check mode, the fluorescent indicator tube displays "K 0 J 0 V 0". Each time a button is pressed, "K" value increases. However, once a button is pressed, it is no longer taken into account.
   "J" value increases like 1, 2, 3 ... if turn the FILE SELECT knob clockwise, or it decreases like 0, 9, 8 ... if turn the JOG dial counterclockwise.
   "V" value increases like 1, 2, 3 ... if turn the VOLUME knob clockwise, or it decreases like 0, 9, 8 ... if turn the JOG dial counterclockwise.

Releasing the GC Test Mode

To release from this mode, press three buttons in the same manner as entering this mode or disconnect the power cord.

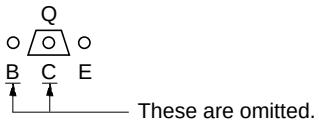
MEMO

SECTION 5
DIAGRAMS

5-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Boards:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▭ : Pattern from the side which enables seeing.
- Indication of transistor.



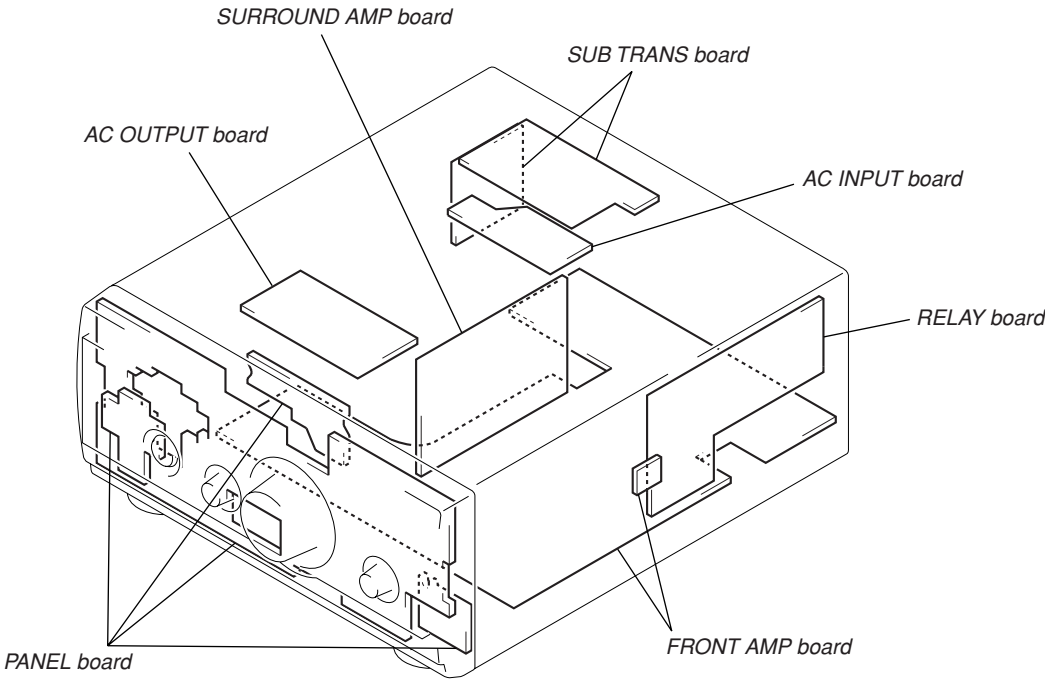
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages are dc with respect to ground under no-signal conditions.
  no mark : Power on
  ( ) : Output is more than 1 W.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO
  ▷ : MIC
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

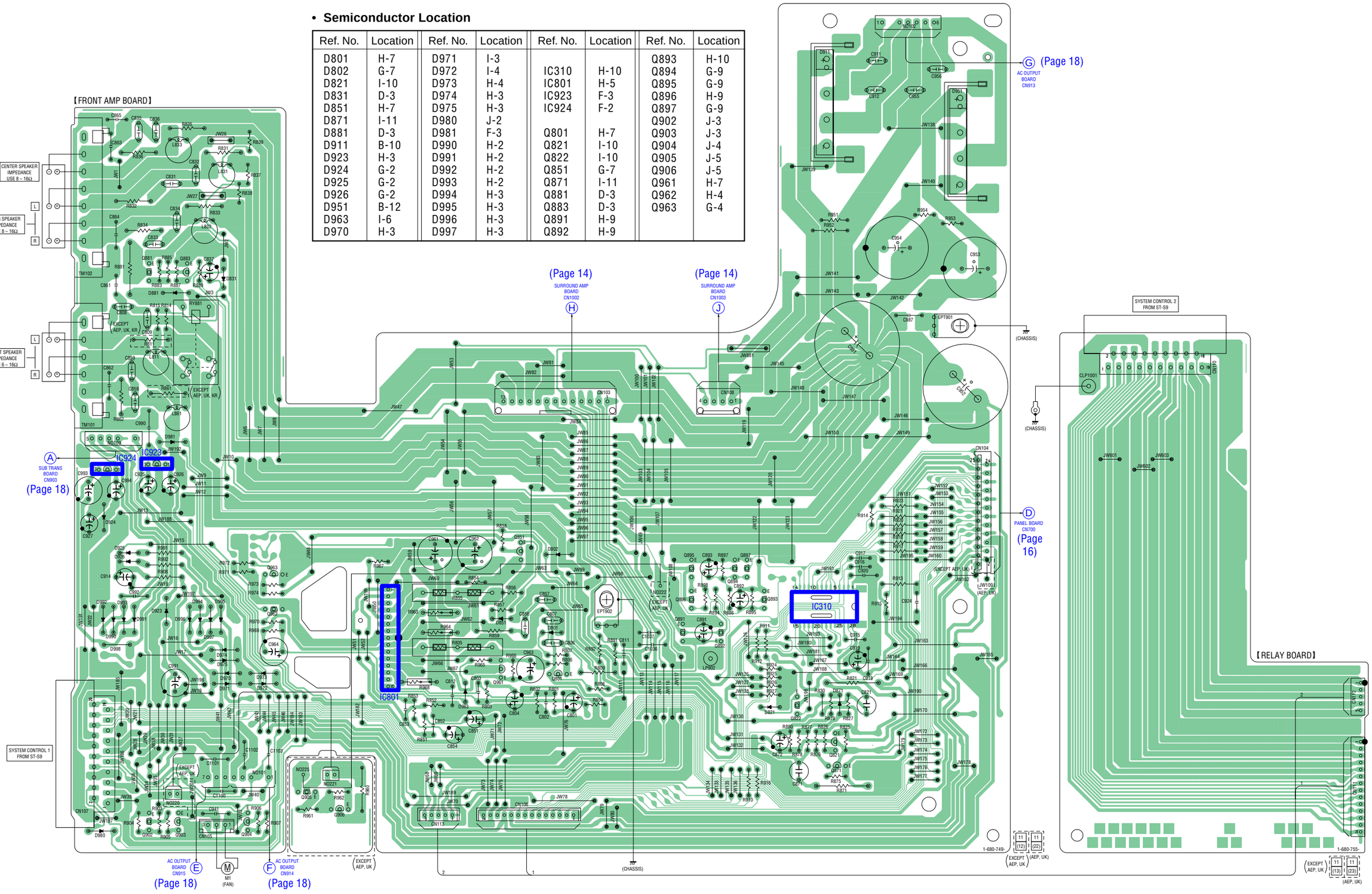
- **Circuit Boards Location**



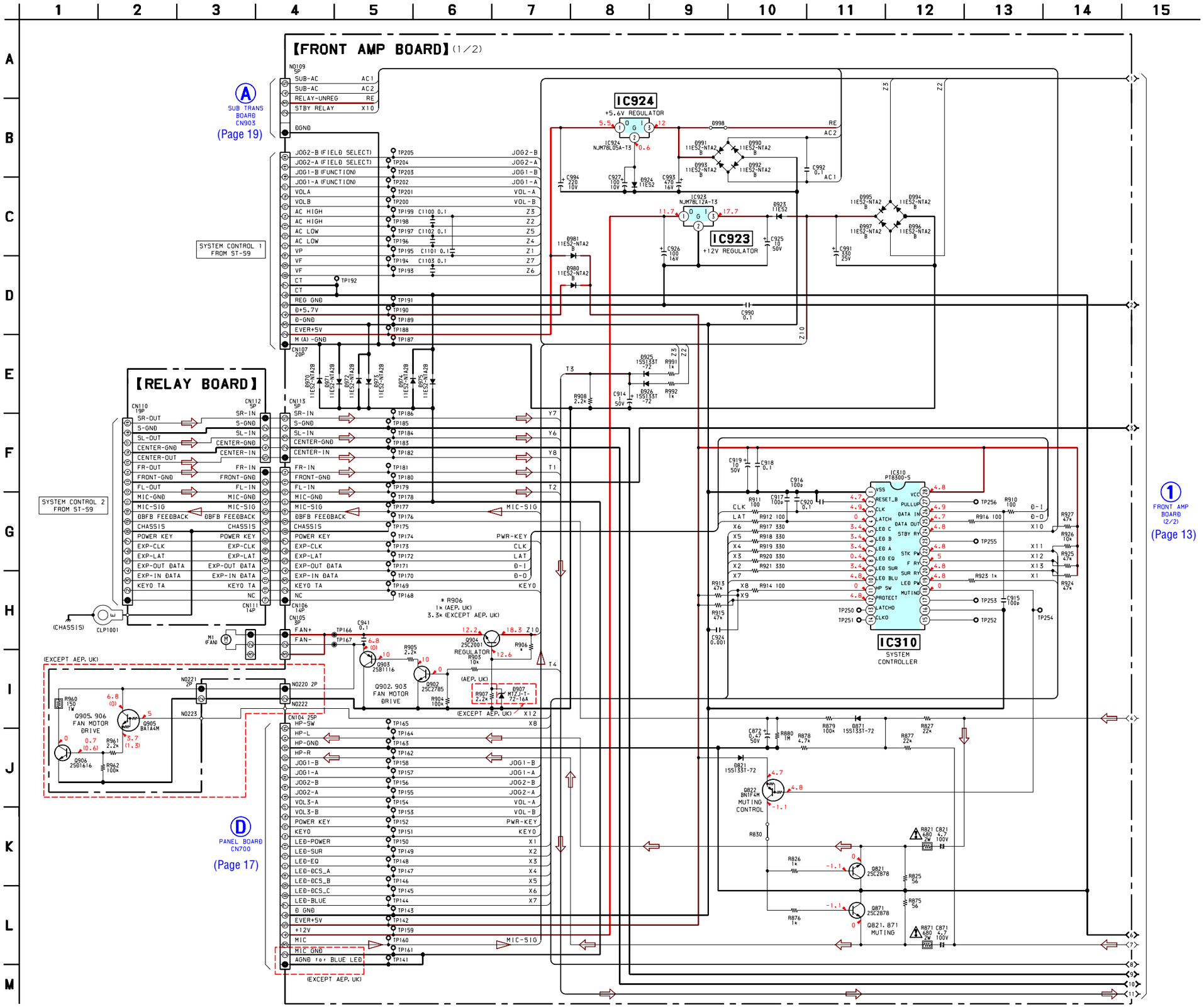
5-2. PRINTED WIRING BOARDS – FRONT AMP Section – • See page 10 for Circuit Boards Location.

• **Semiconductor Location**

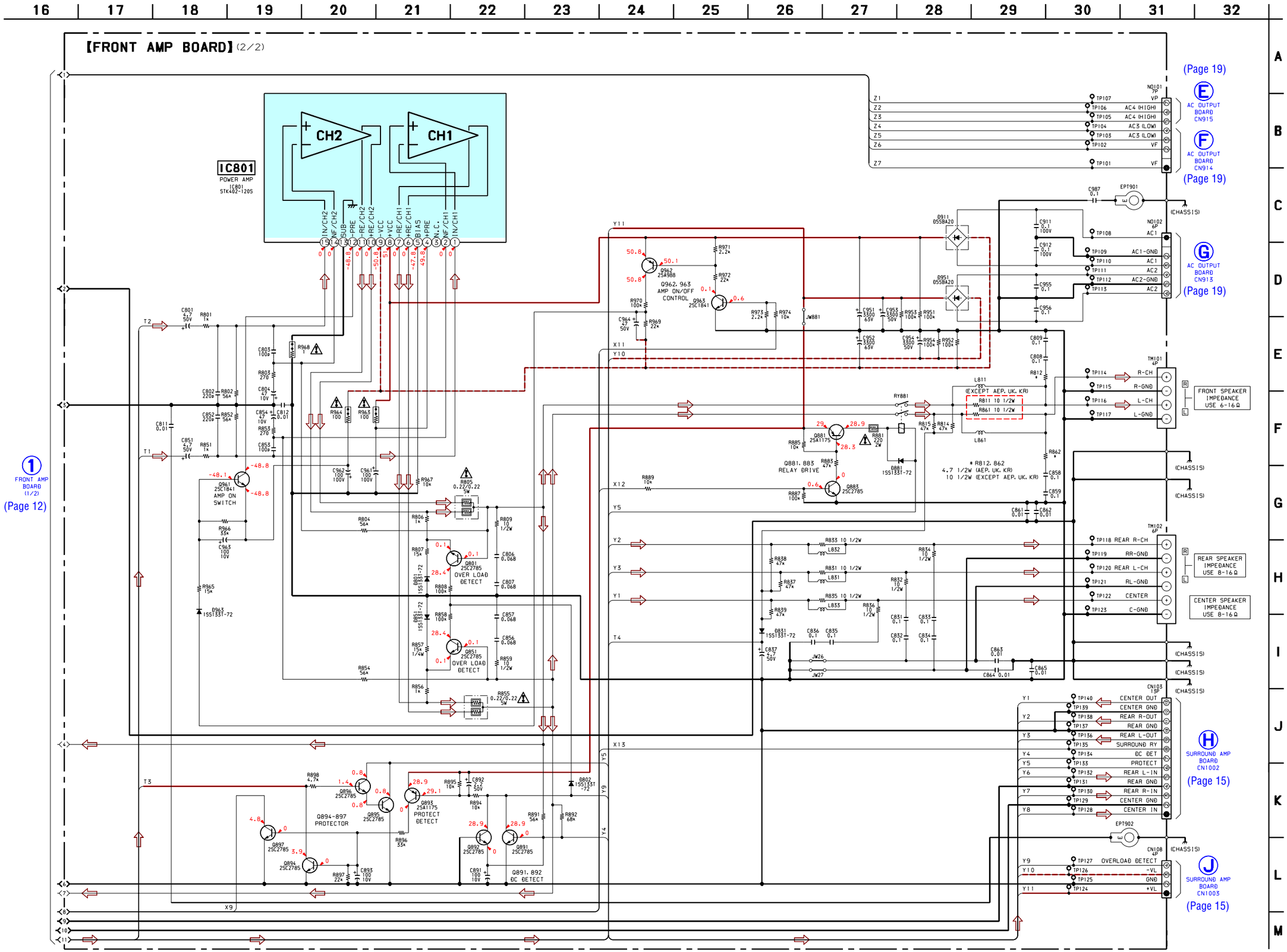
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D801	H-7	D971	I-3			Q893	H-10
D802	G-7	D972	I-4	IC310	H-10	Q894	G-9
D821	I-10	D973	H-4	IC801	H-5	Q895	G-9
D831	D-3	D974	H-3	IC923	F-3	Q896	H-9
D851	H-7	D975	H-3	IC924	F-2	Q897	G-9
D871	I-11	D980	J-2			Q902	J-3
D881	D-3	D981	F-3	Q801	H-7	Q903	J-3
D911	B-10	D990	H-2	Q821	I-10	Q904	J-4
D923	H-3	D991	H-2	Q822	I-10	Q905	J-5
D924	G-2	D992	H-2	Q851	G-7	Q906	J-5
D925	G-2	D993	H-2	Q871	I-11	Q961	H-7
D926	G-2	D994	H-3	Q881	D-3	Q962	H-4
D951	B-12	D995	H-3	Q883	D-3	Q963	G-4
D963	I-6	D996	H-3	Q891	H-9		
D970	H-3	D997	H-3	Q892	H-9		


【FRONT AMP BOARD】
【RELAY BOARD】
IC310
IC801
IC923
IC924
(Page 14) SURROUND AMP BOARD CN1002 (H)
(Page 14) SURROUND AMP BOARD CN1003 (J)
(G) (Page 18) AC OUTPUT BOARD CN913
(D) PANEL BOARD CN700 (Page 16)
(A) SUB TRANS BOARD CN903 (Page 18)
(E) AC OUTPUT BOARD CN915 (Page 18)
(F) AC OUTPUT BOARD CN914 (Page 18)
SYSTEM CONTROL 2 FROM ST-S9
SYSTEM CONTROL 1 FROM ST-S9
CENTER SPEAKER IMPEDANCE USE 8 – 16Ω
REAR SPEAKER IMPEDANCE USE 8 – 16Ω
FRONT SPEAKER IMPEDANCE USE 6 – 16Ω
(CHASSIS)
M1 (FAN)
1-680-749-
1-680-755-
(EXCEPT AEP, UK)
(AEP, UK)

5-3. SCHEMATIC DIAGRAM – FRONT AMP Section (1/2) –



5-4. SCHEMATIC DIAGRAM – FRONT AMP Section (2/2) –

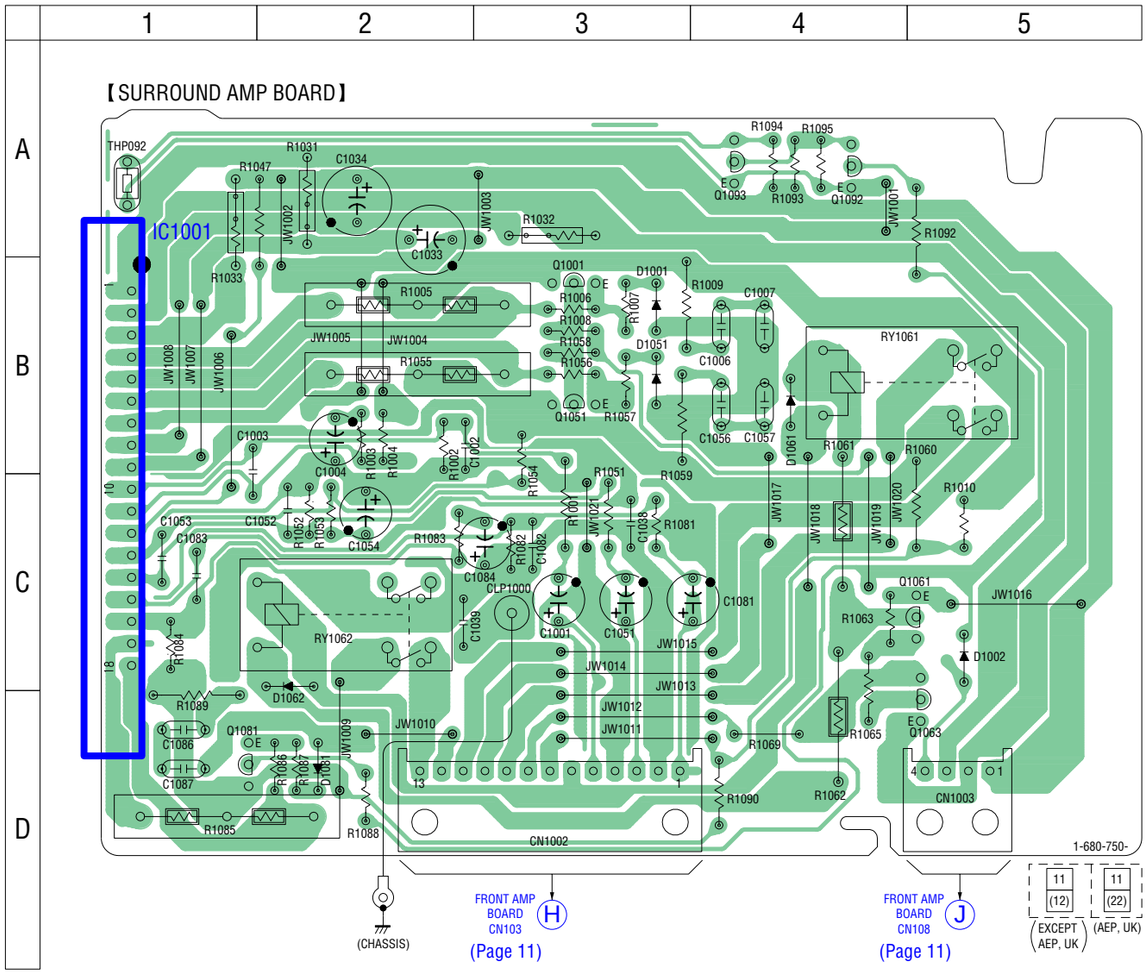


5-5. IC PIN FUNCTION DESCRIPTION

• FRONT AMP BOARD IC310 PT8300-S (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	RESET_B	I	Reset signal input terminal Not used
3	CLK	I	Serial data transfer clock signal input from the tuner unit (ST-S9)
4	LATCH	I	Serial data latch pulse input from the tuner unit (ST-S9)
5	LED C	O	LED drive signal output of the CINEMA STUDIO C indicator (D706) “L”: LED on
6	LED B	O	LED drive signal output of the CINEMA STUDIO B indicator (D705) “L”: LED on
7	LED A	O	LED drive signal output of the CINEMA STUDIO A indicator (D704) “L”: LED on
8	LED EQ	O	LED drive signal output of the EQ indicator (D703) “L”: LED on
9	LED SUR	O	LED drive signal output of the SUR indicator (D702) “L”: LED on
10	LED BLU	O	LED drive signal output of the MULTI CHANNEL DECODING indicator (D781) “L”: LED on
11	HP SW	I	Headphone detection signal input terminal “H”: headphone on
12	PROTECT	I	Over load detection signal input for speaker output “L”: over load
13	LATCHO	O	Serial data latch pulse output terminal Not used (open)
14	CLKO	O	Serial data transfer clock signal output terminal Not used (open)
15	—	—	Not used (open)
16	—	—	Not used (fixed at “L”)
17	—	—	Not used (open)
18	MUTING	O	Muting on/off control signal output terminal “L”: muting
19	LED PW	O	LED drive signal output of the I/⏻ indicator (D701) “L”: LED on
20	SUR RY	O	Relay drive signal output for the surround speaker (rear and center) protection “H”: on
21	F RY	O	Relay drive signal output for the front speaker protection “H”: on
22	STK PW	O	Power amplifier on/off selection signal output terminal “L”: standby, “H”: on
23	—	—	Not used (open)
24	STBY RY	O	Standby relay drive signal output terminal “L”: standby, “H”: power on
25	DATA OUT	O	Serial data output to the tuner unit (ST-S9)
26	DATA IN	I	Serial data input from the tuner unit (ST-S9)
27	PULLUP	—	Not used (open)
28	VCC	—	Power supply terminal (+5V)

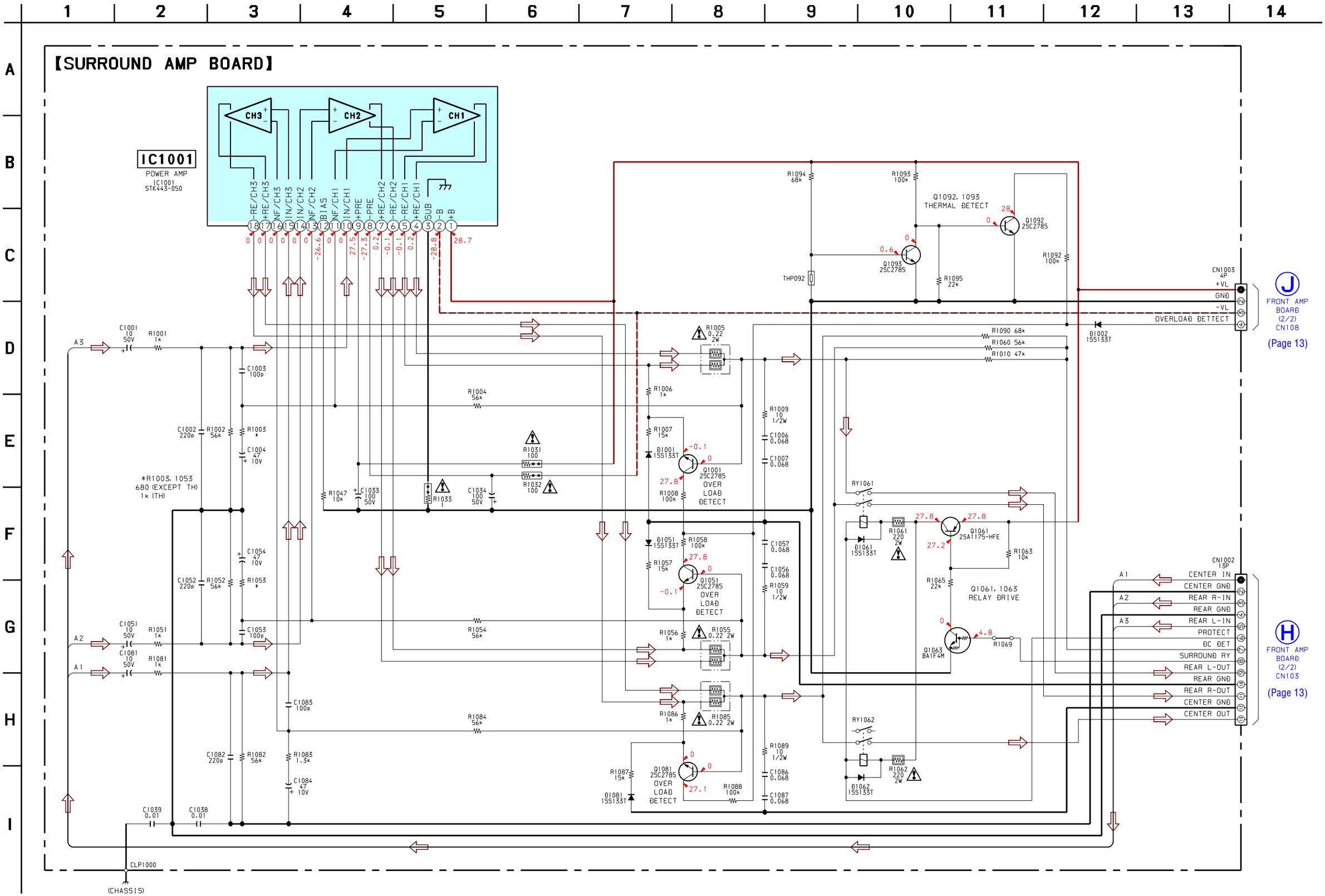
5-6. PRINTED WIRING BOARD – SURROUND AMP Section – • See page 10 for Circuit Boards Location.



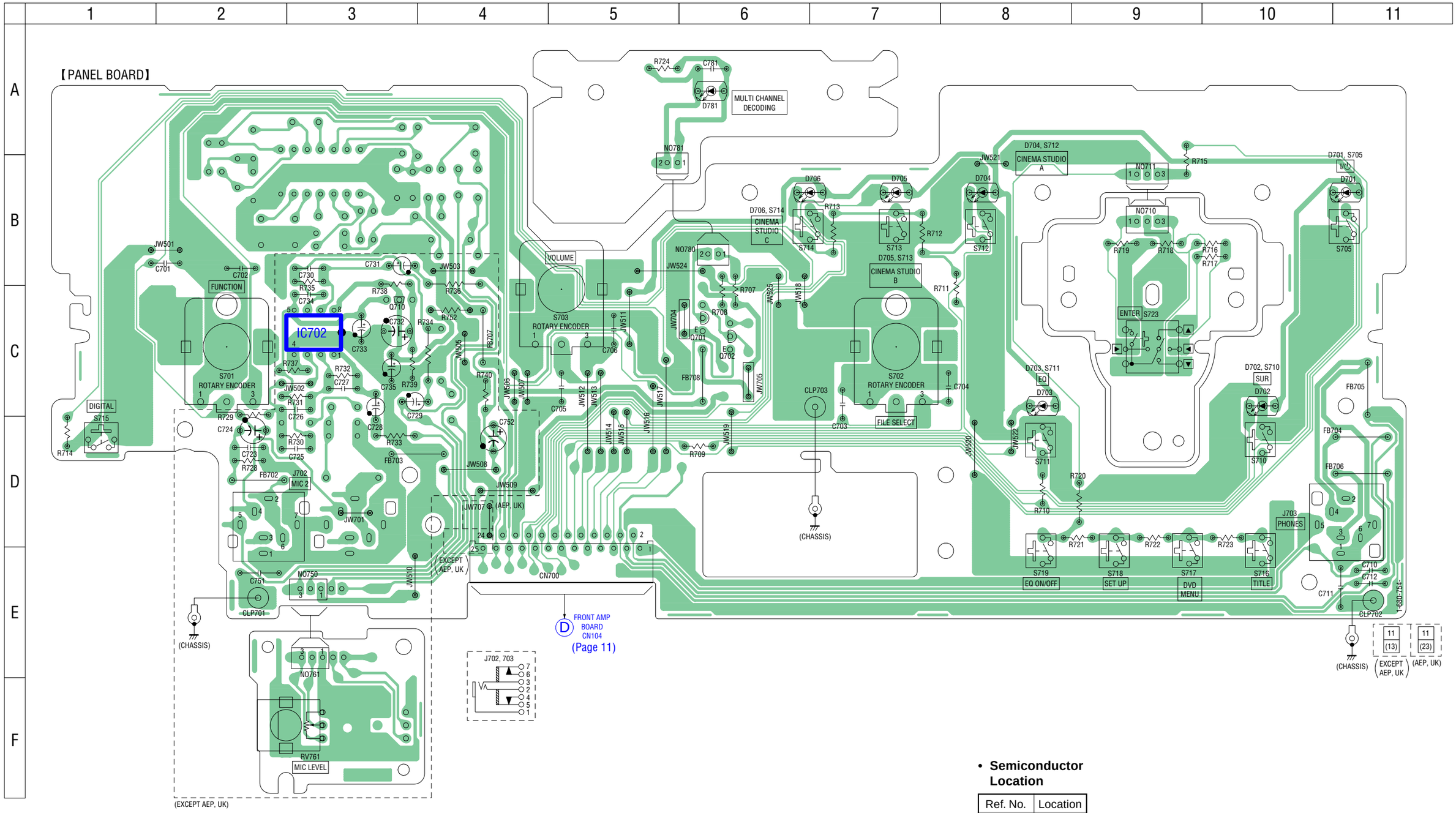
• Semiconductor Location

Ref. No.	Location
D1001	B-3
D1002	C-5
D1051	B-3
D1061	B-4
D1062	C-2
D1081	D-2
IC1001	B-1
Q1001	B-3
Q1051	B-3
Q1061	C-5
Q1063	D-5
Q1081	D-1
Q1092	A-4
Q1093	A-4

5-7. SCHEMATIC DIAGRAM – SURROUND AMP Section –



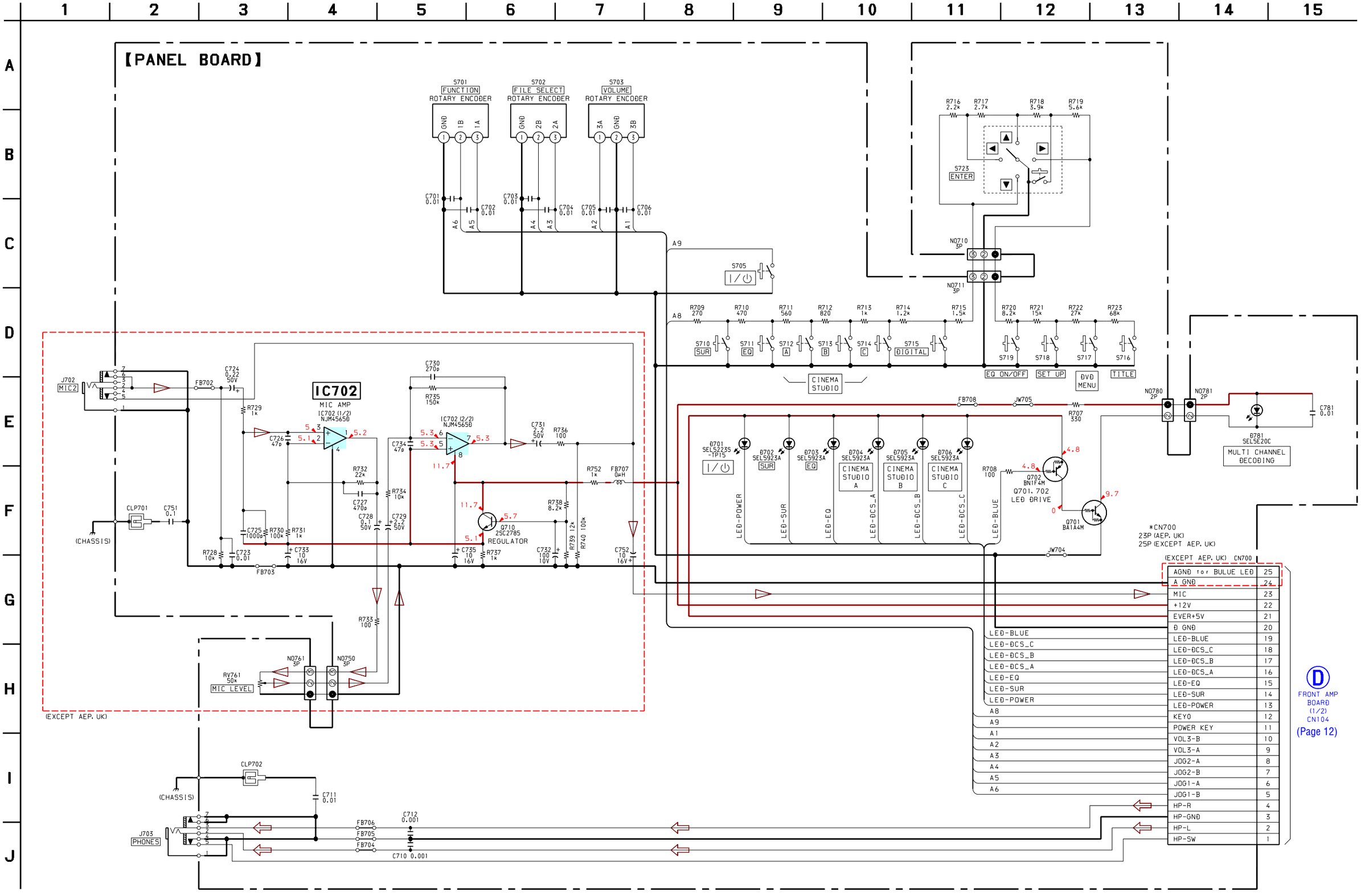
5-8. PRINTED WIRING BOARDS – CONTROL Section – • See page 10 for Circuit Boards Location.



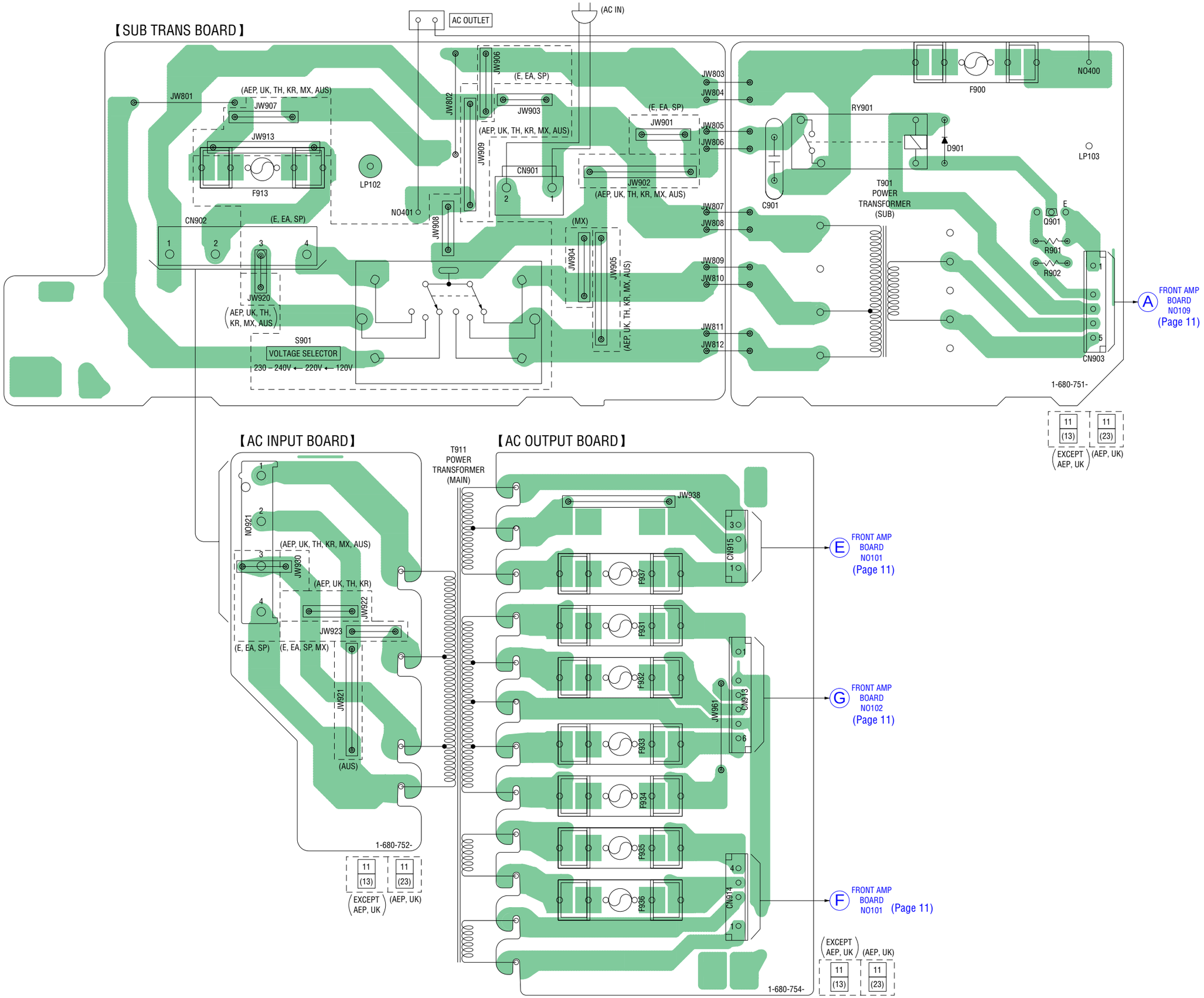
- **Semiconductor Location**

Ref. No.	Location
D701	B-11
D702	C-10
D703	C-8
D704	B-8
D705	B-7
D706	B-6
D781	A-6
IC702	C-3
Q701	C-6
Q702	C-6
Q710	C-3

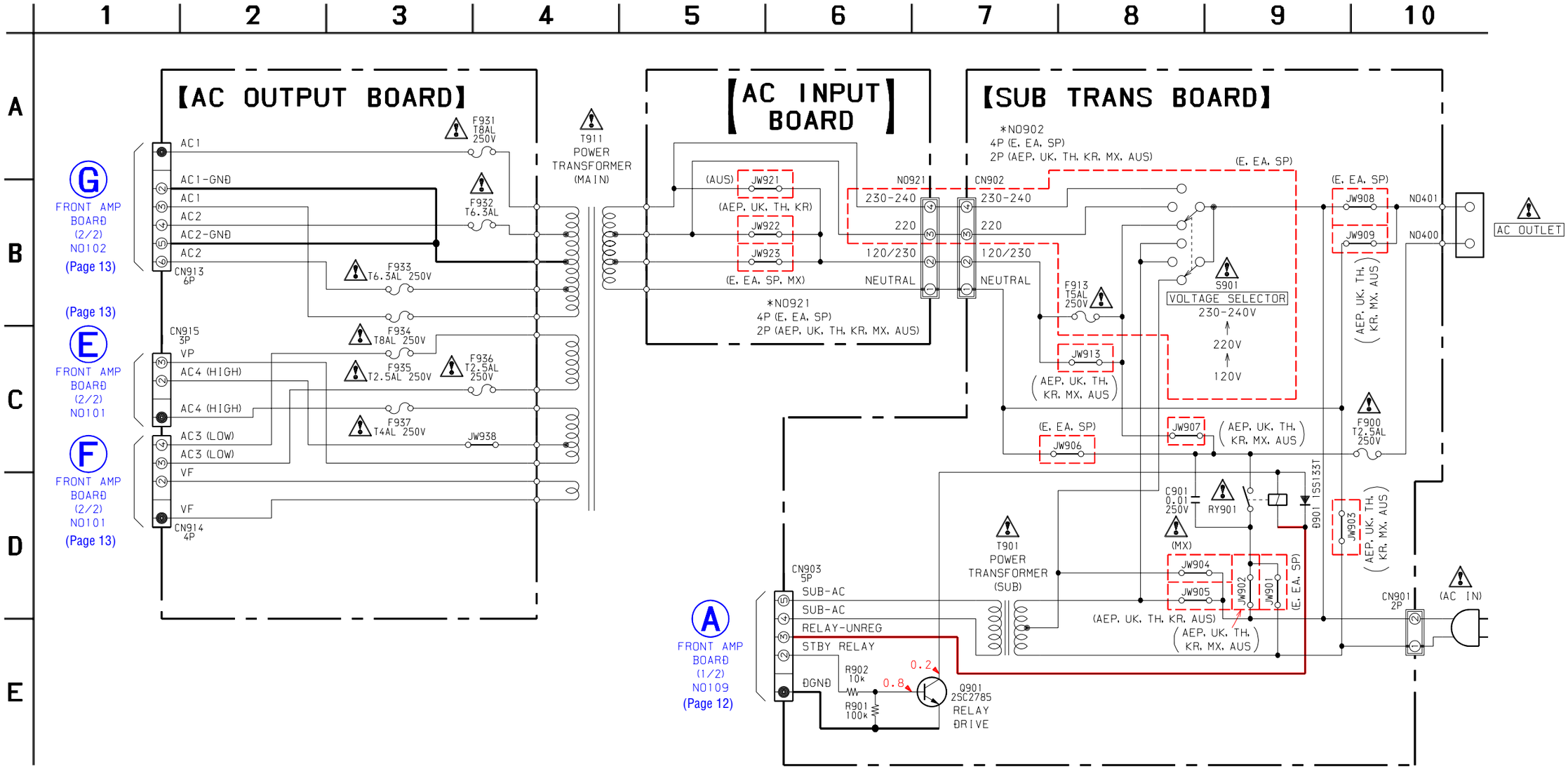
5-9. SCHEMATIC DIAGRAM – CONTROL Section –



5-10. PRINTED WIRING BOARDS – POWER Section – • See page 10 for Circuit Boards Location.



5-11. SCHEMATIC DIAGRAM – POWER Section –



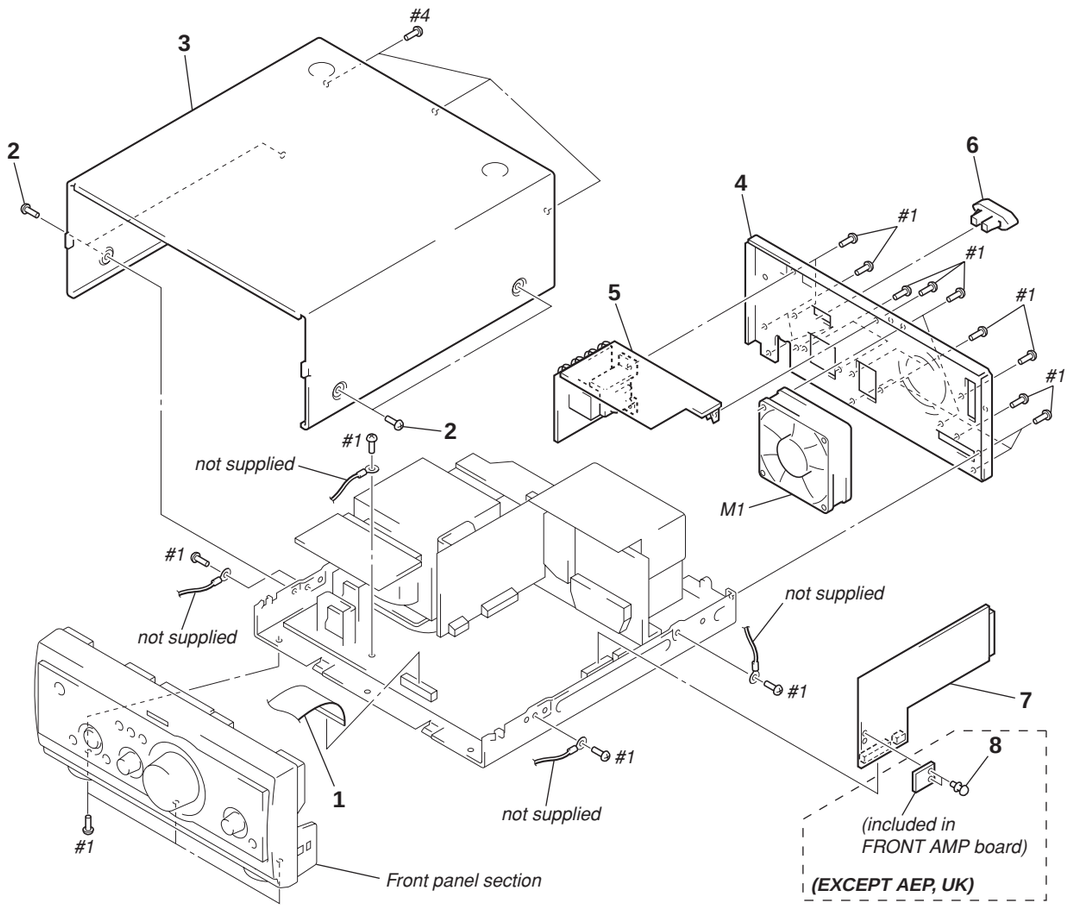
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

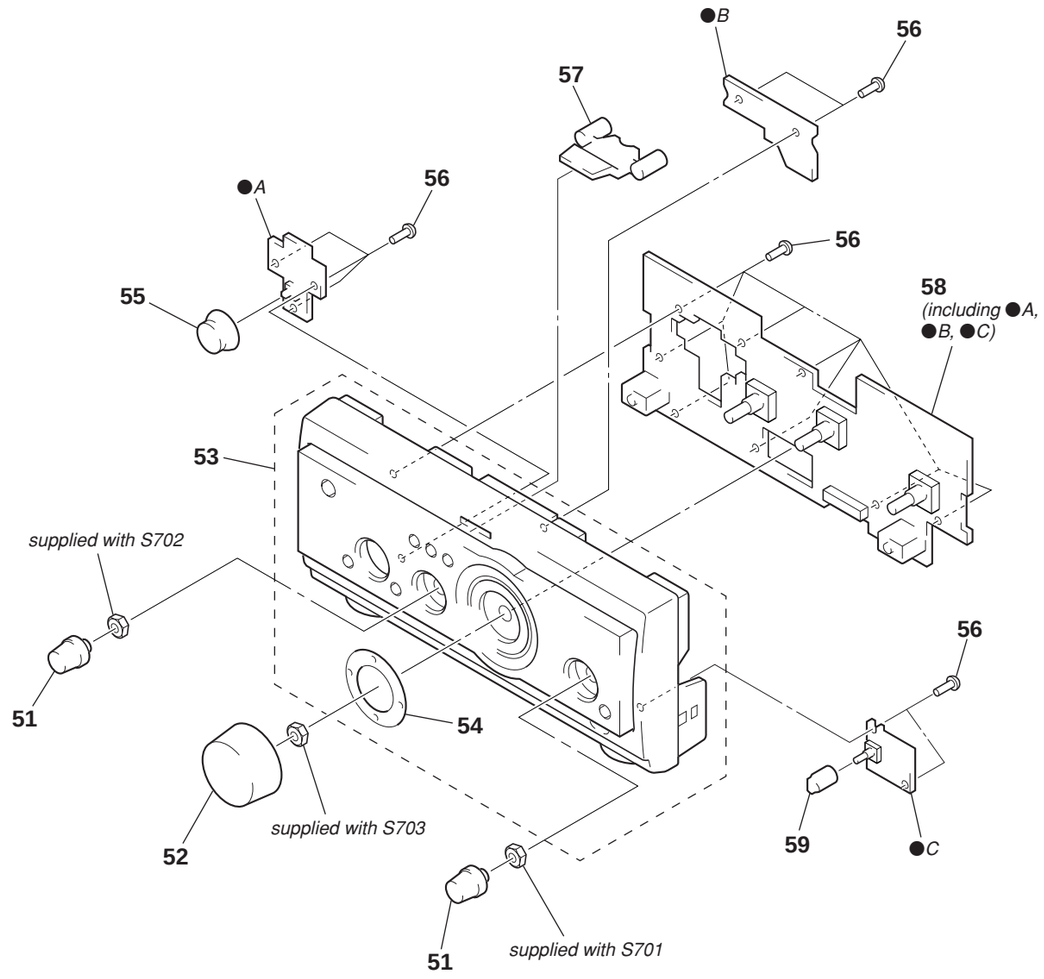
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thailand model

6-1. CASE SECTION



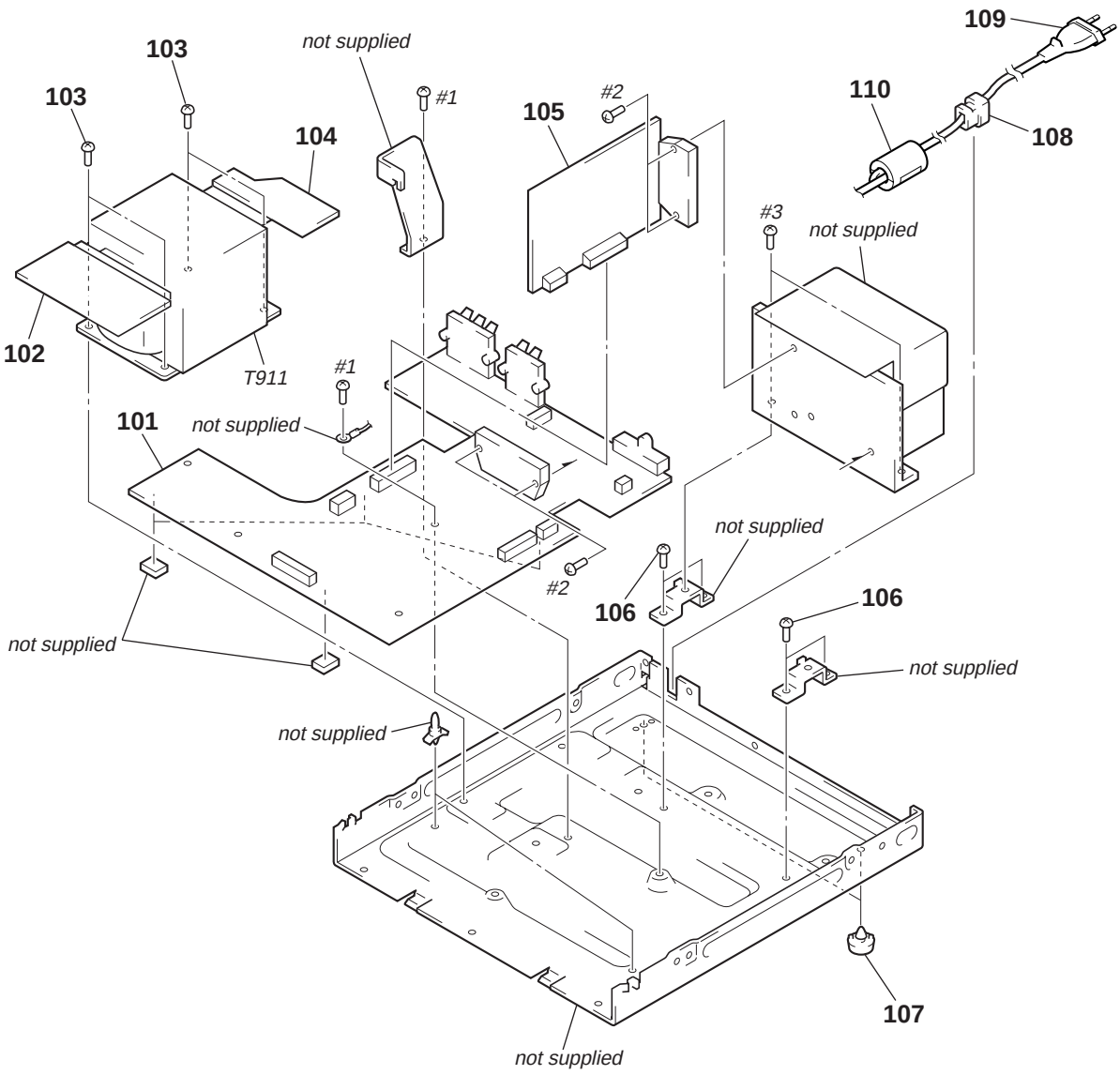
Ref. No.	Part No.	Description	Remark
1	1-773-178-11	WIRE (FLAT TYPE) (23 CORE) (AEP, UK)	
1	1-773-210-11	WIRE (FLAT TYPE) (25 CORE)	(EXCEPT AEP, UK)
2	3-363-099-21	SCREW (CASE 3 TP2)	
3	4-232-336-11	CASE (AEP, UK)	
3	4-232-336-71	CASE (EXCEPT AEP, UK)	
4	4-232-348-01	PANEL (DVD), BACK (AEP, UK)	
4	4-232-348-41	PANEL (DVD), BACK (SP)	
4	4-232-348-51	PANEL (DVD), BACK (EA)	
4	4-232-348-61	PANEL (DVD), BACK (AUS)	
4	4-232-348-71	PANEL (DVD), BACK (TH)	
4	4-232-348-81	PANEL (DVD), BACK (E)	
4	4-232-348-91	PANEL (DVD), BACK (MX)	
4	4-233-563-01	PANEL (DVD), BACK (KR)	
5	1-680-751-11	SUB TRANS BOARD	
⚠6	1-526-794-11	OUTLET, AC (AEP, UK, EA, SP, AUS)	
⚠6	1-526-882-00	OUTLET, AC (E, TH, MX)	
⚠6	1-815-114-11	OUTLET, AC (KR)	
7	1-680-755-11	RELAY BOARD	
8	3-531-576-11	RIVET (EXCEPT AEP, UK)	
M1	1-763-072-11	FAN, D. C.	

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	4-232-342-01	KNOB (FUNC)	
52	4-232-338-01	KNOB (VOL)	
53	X-4953-682-1	PANEL ASSY, FRONT (AEP, UK)	
53	X-4953-683-1	PANEL ASSY, FRONT (EXCEPT AEP, UK)	
54	4-232-341-01	SHEET (VOL)	
55	4-232-343-01	BUTTON (ENTER)	
56	4-951-620-01	SCREW (2.6X8), +BVTP	
57	4-232-344-01	INDICATOR (BLUE)	
58	A-4727-056-A	PANEL BOARD, COMPLETE (TH)	
58	A-4727-061-A	PANEL BOARD, COMPLETE (AEP, UK)	
58	A-4727-073-A	PANEL BOARD, COMPLETE	(E, EA, SP, KR, MX, AUS)
59	4-232-340-01	KNOB (MIC) (EXCEPT AEP, UK)	

6-3. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	A-2007-899-A	FRONT AMP BOARD, COMPLETE	(EA, SP, MX, AUS)
101	A-4476-214-A	FRONT AMP BOARD, COMPLETE (AEP, UK)	
101	A-4727-067-A	FRONT AMP BOARD, COMPLETE (E)	
101	A-4727-514-A	FRONT AMP BOARD, COMPLETE (TH)	
101	A-4727-803-A	FRONT AMP BOARD, COMPLETE (KR)	
102	1-680-753-11	AC OUTPUT BOARD	
103	4-900-386-01	SCREW	
104	1-680-752-11	AC INPUT BOARD	
105	A-2007-897-A	SURROUND AMP BOARD, COMPLETE	(E, EA, SP, KR, MX, AUS)
105	A-4476-217-A	SURROUND AMP BOARD, COMPLETE	(AEP, UK)
105	A-4726-276-A	SURROUND AMP BOARD, COMPLETE (TH)	
106	3-970-608-01	SUMITITE (B3), +BV	
107	4-965-822-01	FOOT	
* 108	3-703-244-00	BUSHING (2104), CORD	(AEP, UK, EA, SP, KR, AUS)
108	3-703-571-11	BUSHING (S) (4516), CORD (E, TH, MX)	
⚠109	1-769-079-21	CORD, POWER (KR)	
⚠109	1-777-071-81	CORD, POWER (AEP, E, EA, SP)	
⚠109	1-783-203-11	CORD, POWER (AUS)	
⚠109	1-790-226-11	CORD, POWER (UK)	
⚠109	1-791-901-11	CORD, POWER (TH, MX)	
110	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
⚠T911	1-435-934-11	TRANSFORMER, POWER (AEP, UK)	
⚠T911	1-435-935-11	TRANSFORMER, POWER (EXCEPT AEP, UK)	

SECTION 7
ELECTRICAL PARTS LIST

AC INPUT

AC OUTPUT **FRONT AMP**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thailand model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	1-680-752-11	AC INPUT BOARD			
		**********			
**********					
	1-680-753-11	AC OUTPUT BOARD			
		**********			
	1-533-217-41	HOLDER, FUSE			
		< CONNECTOR >			
CN913	1-691-768-11	PLUG (MICRO CONNECTOR) 6P			
CN914	1-691-766-11	PLUG (MICRO CONNECTOR) 4P			
CN915	1-691-765-11	PLUG (MICRO CONNECTOR) 3P			
		< FUSE >			
⚠F931	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)			
⚠F932	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (T6.3AL/250V)			
⚠F933	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (T6.3AL/250V)			
⚠F934	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)			
⚠F935	1-533-469-11	FUSE, GLASS TUBE (DIA. 5) (T2.5AL/250V)			
⚠F936	1-533-469-11	FUSE, GLASS TUBE (DIA. 5) (T2.5AL/250V)			
⚠F937	1-533-471-11	FUSE, GLASS TUBE (DIA. 5) (T4AL/250V)			
**********					
	A-2007-899-A	FRONT AMP BOARD, COMPLETE (EA, SP, MX, AUS)			
	A-4476-214-A	FRONT AMP BOARD, COMPLETE (AEP, UK)			
	A-4727-067-A	FRONT AMP BOARD, COMPLETE (E)			
	A-4727-514-A	FRONT AMP BOARD, COMPLETE (TH)			
	A-4727-803-A	FRONT AMP BOARD, COMPLETE (KR)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C801	1-126-963-11	ELECT	4.7uF	20%	50V
C802	1-162-286-31	CERAMIC	220PF	10%	50V
C803	1-162-282-31	CERAMIC	100PF	10%	50V
C804	1-126-947-11	ELECT	47uF	20%	10V
C806	1-136-495-11	FILM	0.068uF	5%	50V
C807	1-136-495-11	FILM	0.068uF	5%	50V
C808	1-136-165-00	FILM	0.1uF	5%	50V
C809	1-136-165-00	FILM	0.1uF	5%	50V
C811	1-162-306-11	CERAMIC	0.01uF	30%	16V
C812	1-162-306-11	CERAMIC	0.01uF	30%	16V
C821	1-107-721-11	ELECT	4.7uF	20%	100V
C831	1-136-165-00	FILM	0.1uF	5%	50V
C832	1-136-165-00	FILM	0.1uF	5%	50V
C833	1-136-165-00	FILM	0.1uF	5%	50V
C834	1-136-165-00	FILM	0.1uF	5%	50V
C835	1-136-165-00	FILM	0.1uF	5%	50V
C836	1-136-165-00	FILM	0.1uF	5%	50V
C837	1-126-963-11	ELECT	4.7uF	20%	50V
C851	1-126-963-11	ELECT	4.7uF	20%	50V
C852	1-162-286-31	CERAMIC	220PF	10%	50V
C853	1-162-282-31	CERAMIC	100PF	10%	50V
C854	1-126-947-11	ELECT	47uF	20%	10V
C856	1-136-495-11	FILM	0.068uF	5%	50V
C857	1-136-495-11	FILM	0.068uF	5%	50V
C858	1-136-165-00	FILM	0.1uF	5%	50V
C859	1-136-165-00	FILM	0.1uF	5%	50V
C861	1-162-306-11	CERAMIC	0.01uF	30%	16V
C862	1-162-306-11	CERAMIC	0.01uF	30%	16V
C863	1-162-306-11	CERAMIC	0.01uF	30%	16V
C864	1-162-306-11	CERAMIC	0.01uF	30%	16V
C865	1-162-306-11	CERAMIC	0.01uF	30%	16V
C871	1-107-721-11	ELECT	4.7uF	20%	100V
C872	1-126-959-11	ELECT	0.47uF	20%	50V
C891	1-104-665-11	ELECT	100uF	20%	10V
C892	1-126-961-11	ELECT	2.2uF	20%	50V
C893	1-104-665-11	ELECT	100uF	20%	10V
C911	1-130-777-00	MYLAR	0.1uF	5%	100V
C912	1-130-777-00	MYLAR	0.1uF	5%	100V
C914	1-115-871-11	ELECT	1uF	20%	50V
C915	1-162-282-31	CERAMIC	100PF	10%	50V
C916	1-162-282-31	CERAMIC	100PF	10%	50V
C917	1-162-282-31	CERAMIC	100PF	10%	50V
C918	1-164-159-11	CERAMIC	0.1uF		50V
C919	1-126-964-11	ELECT	10uF	20%	50V
C920	1-164-159-11	CERAMIC	0.1uF		50V
C924	1-162-294-31	CERAMIC	0.001uF	10%	50V
C925	1-126-795-11	ELECT	10uF	20%	50V
C926	1-126-382-11	ELECT	100uF	20%	16V
C927	1-104-665-11	ELECT	100uF	20%	10V
C941	1-164-159-11	CERAMIC	0.1uF		50V
C951	1-135-516-11	ELECT	3300uF	20%	63V
C952	1-135-516-11	ELECT	3300uF	20%	63V
C953	1-126-974-11	ELECT	3300uF	20%	50V
C954	1-126-974-11	ELECT	3300uF	20%	50V

FRONT AMP

Ref. No.	Part No.	Description			Remark
C955	1-136-165-00	FILM	0.1uF	5%	50V
C956	1-136-165-00	FILM	0.1uF	5%	50V
C961	1-128-563-11	ELECT	100uF	20%	100V
C962	1-128-563-11	ELECT	100uF	20%	100V
C963	1-104-665-11	ELECT	100uF	20%	10V
C964	1-119-943-91	ELECT	47uF	20%	50V
C987	1-164-159-11	CERAMIC	0.1uF		50V
C990	1-164-159-11	CERAMIC	0.1uF		50V
C991	1-126-940-11	ELECT	330uF	20%	25V
C992	1-113-342-11	CERAMIC	0.1uF		50V
C993	1-126-935-11	ELECT	470uF	20%	16V
C994	1-126-934-11	ELECT	220uF	20%	10V
		< CONNECTOR >			
CN103	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P			
CN104	1-784-784-11	CONNECTOR, FFC 23P (AEP, UK)			
CN104	1-784-786-11	CONNECTOR, FFC 25P (EXCEPT AEP, UK)			
CN105	1-564-506-11	PLUG, CONNECTOR 3P			
CN106	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P			
CN107	1-794-498-21	SOCKET, CONNECTOR 20P (SYSTEM CONTROL 1 FROM ST-S9)			
CN108	1-770-721-11	CONNECTOR, BOARD TO BOARD 4P			
CN113	1-770-594-21	CONNECTOR, BOARD TO BOARD 5P			
		< DIODE >			
D801	8-719-911-19	DIODE 1SS133T-72			
D802	8-719-911-19	DIODE 1SS133T-72			
D821	8-719-911-19	DIODE 1SS133T-72			
D831	8-719-911-19	DIODE 1SS133T-72			
D851	8-719-911-19	DIODE 1SS133T-72			
D871	8-719-911-19	DIODE 1SS133T-72			
D881	8-719-911-19	DIODE 1SS133T-72			
D911	8-719-510-68	DIODE D5SBA204101			
D923	8-719-024-99	DIODE 11ES2-NTA2B			
D924	8-719-024-99	DIODE 11ES2-NTA2B			
D925	8-719-911-19	DIODE 1SS133T-72			
D926	8-719-911-19	DIODE 1SS133T-72			
D951	8-719-510-68	DIODE D5SBA204101			
D963	8-719-911-19	DIODE 1SS133T-72			
D970	8-719-024-99	DIODE 11ES2-NTA2B			
D971	8-719-024-99	DIODE 11ES2-NTA2B			
D972	8-719-024-99	DIODE 11ES2-NTA2B			
D973	8-719-024-99	DIODE 11ES2-NTA2B			
D974	8-719-024-99	DIODE 11ES2-NTA2B			
D975	8-719-024-99	DIODE 11ES2-NTA2B			
D980	8-719-024-99	DIODE 11ES2-NTA2B			
D981	8-719-024-99	DIODE 11ES2-NTA2B			
D990	8-719-024-99	DIODE 11ES2-NTA2B			
D991	8-719-024-99	DIODE 11ES2-NTA2B			
D992	8-719-024-99	DIODE 11ES2-NTA2B			
D993	8-719-024-99	DIODE 11ES2-NTA2B			
D994	8-719-024-99	DIODE 11ES2-NTA2B			
D995	8-719-024-99	DIODE 11ES2-NTA2B			
D996	8-719-024-99	DIODE 11ES2-NTA2B			
D997	8-719-024-99	DIODE 11ES2-NTA2B			

Ref. No.	Part No.	Description			Remark
		< GROUND TERMINAL >			
EPT901	1-537-770-21	TERMINAL BOARD, GROUND			
EPT902	1-537-770-21	TERMINAL BOARD, GROUND			
		< IC >			
IC310	6-800-467-01	IC PT8300-S			
IC801	8-749-016-96	IC STK402-120S			
IC923	8-759-595-88	IC NJM78L12A-T3			
IC924	8-759-708-05	IC NJM78L05A-T3			
		< COIL >			
L811	1-420-872-00	COIL, AIR-CORE			
L831	1-420-872-00	COIL, AIR-CORE			
L832	1-420-872-00	COIL, AIR-CORE			
L833	1-420-872-00	COIL, AIR-CORE			
L861	1-420-872-00	COIL, AIR-CORE			
		< TRANSISTOR >			
Q801	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q821	8-729-231-55	TRANSISTOR	2SC2878AB-TPE2		
Q822	8-729-900-63	TRANSISTOR	BN1F4M-TP		
Q851	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q871	8-729-231-55	TRANSISTOR	2SC2878AB-TPE2		
Q881	8-729-119-76	TRANSISTOR	2SA1175TP-HFE		
Q883	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q891	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q892	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q893	8-729-119-76	TRANSISTOR	2SA1175TP-HFE		
Q894	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q895	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q896	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q897	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q902	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q903	8-729-140-04	TRANSISTOR	2SB1116-TP-LK		
Q904	8-729-142-46	TRANSISTOR	2SC2001TP-LK		
Q905	8-729-900-80	TRANSISTOR	BA1A4M-TP		(EXCEPT AEP, UK)
Q906	8-729-111-29	TRANSISTOR	2SD1616-TP-LK		(EXCEPT AEP, UK)
Q961	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q962	8-729-140-82	TRANSISTOR	2SA988TP-PAFAEA		
Q963	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
		< RESISTOR/DIODE >			
R801	1-249-417-11	CARBON	1K	5% 1/4W	
R802	1-249-438-11	CARBON	56K	5% 1/4W	
R803	1-249-410-11	CARBON	270	5% 1/4W	
R804	1-249-438-11	CARBON	56K	5% 1/4W	
⚠R805	1-234-499-21	ENCAPSULATED COMPONENT 0.22		5W	
R806	1-249-417-11	CARBON	1K	5% 1/4W	
R807	1-249-431-11	CARBON	15K	5% 1/4W	
R808	1-249-441-11	CARBON	100K	5% 1/4W	
R809	1-260-076-11	CARBON	10	5% 1/2W	
R811	1-260-076-11	CARBON	10	5% 1/2W	(EXCEPT AEP, UK, KR)
R812	1-260-076-11	CARBON	10	5% 1/2W	(EXCEPT AEP, UK, KR)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

FRONT AMP

Ref. No.	Part No.	Description			Remark
R812	1-260-300-11	CARBON	4.7	5%	1/2W (AEP, UK, KR)
R814	1-249-437-11	CARBON	47K	5%	1/4W
R815	1-249-437-11	CARBON	47K	5%	1/4W
⚠R821	1-215-891-11	METAL OXIDE	680	5%	2W F
R825	1-249-402-11	CARBON	56	5%	1/4W
R826	1-249-417-11	CARBON	1K	5%	1/4W
R827	1-249-433-11	CARBON	22K	5%	1/4W
R831	1-260-076-11	CARBON	10	5%	1/2W
R832	1-260-076-11	CARBON	10	5%	1/2W
R833	1-260-076-11	CARBON	10	5%	1/2W
R834	1-260-076-11	CARBON	10	5%	1/2W
R835	1-260-076-11	CARBON	10	5%	1/2W
R836	1-260-076-11	CARBON	10	5%	1/2W
R837	1-249-437-11	CARBON	47K	5%	1/4W
R838	1-249-437-11	CARBON	47K	5%	1/4W
R839	1-249-437-11	CARBON	47K	5%	1/4W
R851	1-249-417-11	CARBON	1K	5%	1/4W
R852	1-249-438-11	CARBON	56K	5%	1/4W
R853	1-249-410-11	CARBON	270	5%	1/4W
R854	1-249-438-11	CARBON	56K	5%	1/4W
⚠R855	1-234-499-21	ENCAPSULATED COMPONENT	0.22		5W
R856	1-249-417-11	CARBON	1K	5%	1/4W
R857	1-249-431-11	CARBON	15K	5%	1/4W
R858	1-249-441-11	CARBON	100K	5%	1/4W
R859	1-260-076-11	CARBON	10	5%	1/2W
R861	1-260-076-11	CARBON	10	5%	1/2W (EXCEPT AEP, UK, KR)
R862	1-260-076-11	CARBON	10	5%	1/2W (EXCEPT AEP, UK, KR)
R862	1-260-300-11	CARBON	4.7	5%	1/2W (AEP, UK, KR)
⚠R871	1-215-891-11	METAL OXIDE	680	5%	2W F
R875	1-249-402-11	CARBON	56	5%	1/4W
R876	1-249-417-11	CARBON	1K	5%	1/4W
R877	1-249-433-11	CARBON	22K	5%	1/4W
R878	1-249-425-11	CARBON	4.7K	5%	1/4W
R879	1-249-441-11	CARBON	100K	5%	1/4W
R880	1-247-903-00	CARBON	1M	5%	1/4W
⚠R881	1-215-888-00	METAL OXIDE	220	5%	2W F
R883	1-249-437-11	CARBON	47K	5%	1/4W
R885	1-249-429-11	CARBON	10K	5%	1/4W
R887	1-249-441-11	CARBON	100K	5%	1/4W
R889	1-249-429-11	CARBON	10K	5%	1/4W
R891	1-249-438-11	CARBON	56K	5%	1/4W
R892	1-249-439-11	CARBON	68K	5%	1/4W
R894	1-249-429-11	CARBON	10K	5%	1/4W
R895	1-249-429-11	CARBON	10K	5%	1/4W
R896	1-249-435-11	CARBON	33K	5%	1/4W
R897	1-249-433-11	CARBON	22K	5%	1/4W
R898	1-249-425-11	CARBON	4.7K	5%	1/4W
R903	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-249-441-11	CARBON	100K	5%	1/4W
R905	1-249-421-11	CARBON	2.2K	5%	1/4W
R906	1-247-843-11	CARBON	3.3K	5%	1/4W (EXCEPT AEP, UK)
R906	1-249-417-11	CARBON	1K	5%	1/4W (AEP, UK)
R907	1-249-421-11	CARBON	2.2K	5%	1/4W (AEP, UK)
R907	8-719-947-64	DIODE	MTZJ-T-72-16A (EXCEPT AEP, UK)		
R908	1-249-421-11	CARBON	2.2K	5%	1/4W
R910	1-247-807-31	CARBON	100	5%	1/4W
R911	1-247-807-31	CARBON	100	5%	1/4W
R912	1-247-807-31	CARBON	100	5%	1/4W
R913	1-249-437-11	CARBON	47K	5%	1/4W
R914	1-247-807-31	CARBON	100	5%	1/4W
R915	1-249-437-11	CARBON	47K	5%	1/4W
R916	1-247-807-31	CARBON	100	5%	1/4W
R917	1-249-411-11	CARBON	330	5%	1/4W
R918	1-249-411-11	CARBON	330	5%	1/4W
R919	1-249-411-11	CARBON	330	5%	1/4W
R920	1-249-411-11	CARBON	330	5%	1/4W
R921	1-249-411-11	CARBON	330	5%	1/4W
R923	1-249-417-11	CARBON	1K	5%	1/4W
R924	1-249-437-11	CARBON	47K	5%	1/4W
R925	1-249-437-11	CARBON	47K	5%	1/4W
R926	1-249-429-11	CARBON	10K	5%	1/4W
R927	1-249-437-11	CARBON	47K	5%	1/4W
R951	1-249-441-11	CARBON	100K	5%	1/4W
R952	1-249-441-11	CARBON	100K	5%	1/4W
R953	1-249-441-11	CARBON	100K	5%	1/4W
R954	1-249-441-11	CARBON	100K	5%	1/4W
⚠R960	1-215-887-00	METAL OXIDE	150	5%	2W F (EXCEPT AEP, UK)
R961	1-249-421-11	CARBON	2.2K	5%	1/4W (EXCEPT AEP, UK)
R962	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT AEP, UK)
⚠R963	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R964	1-212-881-11	FUSIBLE	100	5%	1/4W F
R965	1-249-431-11	CARBON	15K	5%	1/4W
R966	1-249-435-11	CARBON	33K	5%	1/4W
R967	1-249-429-11	CARBON	10K	5%	1/4W
⚠R968	1-202-972-61	FUSIBLE	1	5%	1/4W F
R969	1-249-433-11	CARBON	22K	5%	1/4W
R970	1-249-441-11	CARBON	100K	5%	1/4W
R971	1-249-421-11	CARBON	2.2K	5%	1/4W
R972	1-249-433-11	CARBON	22K	5%	1/4W
R973	1-249-421-11	CARBON	2.2K	5%	1/4W
R974	1-249-429-11	CARBON	10K	5%	1/4W
R991	1-249-417-11	CARBON	1K	5%	1/4W
R992	1-249-417-11	CARBON	1K	5%	1/4W
		< RELAY >			
RY881	1-515-920-11	RELAY			
		< TERMINAL >			
TM101	1-694-677-12	TERMINAL BOARD (4P) (FRONT SPEAKER IMPEDANCE USE 6-16Ω)			
TM102	1-694-674-12	TERMINAL BOARD (6P) (REAR/CENTER SPEAKER IMPEDANCE USE 8-16Ω)			

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Replace only with part number specified.

PANEL

Ref. No.	Part No.	Description			Remark
	A-4727-056-A	PANEL BOARD, COMPLETE (TH)			
	A-4727-061-A	PANEL BOARD, COMPLETE (AEP, UK)			
	A-4727-073-A	PANEL BOARD, COMPLETE			
		**********			(EXCEPT AEP, UK, KR)
		< CAPACITOR >			
C701	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C702	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C703	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C704	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C705	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C706	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C710	1-162-294-31	CERAMIC	0.001uF	10% 50V	
C711	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C712	1-162-294-31	CERAMIC	0.001uF	10% 50V	
C723	1-162-306-11	CERAMIC	0.01uF	30% 16V	(EXCEPT AEP, UK)
C724	1-115-868-11	ELECT	0.22uF	20% 50V	(EXCEPT AEP, UK)
C725	1-162-294-31	CERAMIC	0.001uF	10% 50V	(EXCEPT AEP, UK)
C726	1-162-215-31	CERAMIC	47PF	5% 50V	(EXCEPT AEP, UK)
C727	1-162-290-31	CERAMIC	470PF	10% 50V	(EXCEPT AEP, UK)
C728	1-115-867-11	ELECT	0.1uF	20% 50V	(EXCEPT AEP, UK)
C729	1-115-872-11	ELECT	2.2uF	20% 50V	(EXCEPT AEP, UK)
C730	1-162-287-31	CERAMIC	270PF	10% 50V	(EXCEPT AEP, UK)
C731	1-115-872-11	ELECT	2.2uF	20% 50V	(EXCEPT AEP, UK)
C732	1-126-382-11	ELECT	100uF	20% 10V	(EXCEPT AEP, UK)
C733	1-126-791-11	ELECT	10uF	20% 16V	(EXCEPT AEP, UK)
C734	1-162-215-31	CERAMIC	47PF	5% 50V	(EXCEPT AEP, UK)
C735	1-126-791-11	ELECT	10uF	20% 16V	(EXCEPT AEP, UK)
C751	1-164-159-11	CERAMIC	0.1uF	50V	(EXCEPT AEP, UK)
C752	1-126-791-11	ELECT	10uF	20% 16V	(EXCEPT AEP, UK)
C781	1-162-306-11	CERAMIC	0.01uF	30% 16V	
		< CONNECTOR >			
CN700	1-784-745-11	CONNECTOR, FFC 23P (AEP, UK)			
CN700	1-784-747-11	CONNECTOR, FFC 25P (EXCEPT AEP, UK)			
		< LED >			
D701	8-719-058-04	LED SEL5223S-TP15 (I/⏻)			
D702	8-719-057-97	LED SEL5923A-TP15 (SUR)			
D703	8-719-057-97	LED SEL5923A-TP15 (EQ)			
D704	8-719-057-97	LED SEL5923A-TP15 (CINEMA STUDIO A)			
D705	8-719-057-97	LED SEL5923A-TP15 (CINEMA STUDIO B)			
D706	8-719-057-97	LED SEL5923A-TP15 (CINEMA STUDIO C)			
D781	8-719-084-07	LED SEL5E20CTP15			(MULTI CHANNEL DECODING)

Ref. No.	Part No.	Description			Remark
		< COIL >			
FB707	1-412-473-21	INDUCTOR	0uH		(EXCEPT AEP, UK)
		< IC >			
IC702	8-759-167-88	IC NJM4565D			(EXCEPT AEP, UK)
		< JACK >			
J702	1-815-603-11	JACK (MIC)			(EXCEPT AEP, UK)
J703	1-691-293-21	JACK (PHONES)			
		< TRANSISTOR >			
Q701	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q702	8-729-900-63	TRANSISTOR	BN1F4M-TP		
Q710	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		(EXCEPT AEP, UK)
		< RESISTOR >			
R707	1-249-411-11	CARBON	330	5% 1/4W	
R708	1-247-807-31	CARBON	100	5% 1/4W	
R709	1-249-410-11	CARBON	270	5% 1/4W	
R710	1-249-413-11	CARBON	470	5% 1/4W	
R711	1-249-414-11	CARBON	560	5% 1/4W	
R712	1-249-416-11	CARBON	820	5% 1/4W	
R713	1-249-417-11	CARBON	1K	5% 1/4W	
R714	1-249-418-11	CARBON	1.2K	5% 1/4W	
R715	1-249-419-11	CARBON	1.5K	5% 1/4W	
R716	1-249-421-11	CARBON	2.2K	5% 1/4W	
R717	1-249-422-11	CARBON	2.7K	5% 1/4W	
R718	1-249-424-11	CARBON	3.9K	5% 1/4W	
R719	1-249-426-11	CARBON	5.6K	5% 1/4W	
R720	1-249-428-11	CARBON	8.2K	5% 1/4W	
R721	1-249-431-11	CARBON	15K	5% 1/4W	
R722	1-249-434-11	CARBON	27K	5% 1/4W	
R723	1-249-439-11	CARBON	68K	5% 1/4W	
R728	1-249-429-11	CARBON	10K	5% 1/4W	(EXCEPT AEP, UK)
R729	1-249-417-11	CARBON	1K	5% 1/4W	(EXCEPT AEP, UK)
R730	1-249-441-11	CARBON	100K	5% 1/4W	(EXCEPT AEP, UK)
R731	1-249-417-11	CARBON	1K	5% 1/4W	(EXCEPT AEP, UK)
R732	1-249-433-11	CARBON	22K	5% 1/4W	(EXCEPT AEP, UK)
R733	1-247-807-31	CARBON	100	5% 1/4W	(EXCEPT AEP, UK)
R734	1-249-429-11	CARBON	10K	5% 1/4W	(EXCEPT AEP, UK)
R735	1-247-883-00	CARBON	150K	5% 1/4W	(EXCEPT AEP, UK)
R736	1-247-807-31	CARBON	100	5% 1/4W	(EXCEPT AEP, UK)
R737	1-249-417-11	CARBON	1K	5% 1/4W	(EXCEPT AEP, UK)
R738	1-249-428-11	CARBON	8.2K	5% 1/4W	(EXCEPT AEP, UK)
R739	1-249-430-11	CARBON	12K	5% 1/4W	(EXCEPT AEP, UK)

PANEL | RELAY | SUB TRANS | SURROUND AMP

Ref. No.	Part No.	Description	Remark
R740	1-249-441-11	CARBON 100K 5% 1/4W	(EXCEPT AEP, UK)
R752	1-249-417-11	CARBON 1K 5% 1/4W	(EXCEPT AEP, UK)
		< VARIABLE RESISTOR >	
RV761	1-225-739-11	RES, VAR CARBON 50K (MIC LEVEL)	(EXCEPT AEP, UK)
		< SWITCH >	
S701	1-473-534-11	ENCODER, ROTARY (FUNCTION)	
S702	1-473-534-11	ENCODER, ROTARY (FILE SELECT)	
S703	1-473-392-11	ENCODER, ROTARY (VOLUME)	
S705	1-771-410-21	SWITCH, TACTILE (I/⏻)	
S710	1-771-410-21	SWITCH, TACTILE (SUR)	
S711	1-771-410-21	SWITCH, TACTILE (EQ)	
S712	1-771-410-21	SWITCH, TACTILE (CINEMA STUDIO A)	
S713	1-771-410-21	SWITCH, TACTILE (CINEMA STUDIO B)	
S714	1-771-410-21	SWITCH, TACTILE (CINEMA STUDIO C)	
S715	1-771-410-21	SWITCH, TACTILE (DIGITAL)	
S716	1-771-410-21	SWITCH, TACTILE (TITLE)	
S717	1-771-410-21	SWITCH, TACTILE (DVD MENU)	
S718	1-771-410-21	SWITCH, TACTILE (SET UP)	
S719	1-771-410-21	SWITCH, TACTILE (EQ ON/OFF)	
S723	1-771-879-11	SWITCH, TACTILE (ENTER)	
**********			
	1-680-755-11	RELAY BOARD	
		**********	
		< CONNECTOR >	
CN110	1-793-351-41	SOCKET, CONNECTOR 19P	(SYSTEM CONTROL 2 FROM ST-S9)
* CN111	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P	
CN112	1-770-593-41	CONNECTOR, BOARD TO BOARD 5P	
**********			
	1-680-751-11	SUB TRANS BOARD	
		**********	
	1-533-217-41	HOLDER, FUSE	
		< CAPACITOR >	
⚠C901	1-113-925-11	CERAMIC 0.01uF 20% 250V	
		< CONNECTOR >	
CN901	1-564-321-00	PIN, CONNECTOR 2P	
* CN902	1-564-321-21	PIN, CONNECTOR 2P	(AEP, UK, TH, KR, MX, AUS)
CN902	1-568-106-11	PIN, CONNECTOR 4P (E, EA, SP)	
CN903	1-691-767-11	PLUG (MICRO CONNECTOR) 5P	
		< DIODE >	
D901	8-719-911-19	DIODE 1SS133T-72	
		< FUSE >	
⚠F900	1-533-469-11	FUSE2,GLASS TUBE (DIA. 5) (T2.5AL/250V)	
⚠F913	1-533-472-11	FUSE2,GLASS TUBE (DIA. 5) (T5AL/250V)	(E, EA, SP)

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q901	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		< RESISTOR >	
R901	1-249-441-11	CARBON 100K 5% 1/4W	
R902	1-249-429-11	CARBON 10K 5% 1/4W	
		< RELAY >	
⚠RY901	1-755-276-11	RELAY, POWER	
		< SWITCH >	
⚠S901	1-786-055-21	SELECTOR, VOLTAGE (VOLTAGE SELECTOR)	(E, EA, SP)
		< TRANSFORMER >	
⚠T901	1-435-824-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-435-825-11	TRANSFORMER, POWER	(E, EA, SP, TH, KR, MX, AUS)
**********			
	A-2007-897-A	SURROUND AMP BOARD, COMPLETE	(E, EA, SP, KR, MX, AUS)
	A-4476-217-A	SURROUND AMP BOARD, COMPLETE	(AEP, UK)
	A-4726-276-A	SURROUND AMP BOARD, COMPLETE (TH)	
		**********	
		< CAPACITOR >	
C1001	1-126-964-11	ELECT 10uF 20% 50V	
C1002	1-162-286-31	CERAMIC 220PF 10% 50V	
C1003	1-162-282-31	CERAMIC 100PF 10% 50V	
C1004	1-126-947-11	ELECT 47uF 20% 10V	
C1006	1-136-495-11	FILM 0.068uF 5% 50V	
C1007	1-136-495-11	FILM 0.068uF 5% 50V	
C1033	1-126-968-11	ELECT 100uF 20% 50V	
C1034	1-126-968-11	ELECT 100uF 20% 50V	
C1038	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C1039	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C1051	1-126-964-11	ELECT 10uF 20% 50V	
C1052	1-162-286-31	CERAMIC 220PF 10% 50V	
C1053	1-162-282-31	CERAMIC 100PF 10% 50V	
C1054	1-126-947-11	ELECT 47uF 20% 10V	
C1056	1-136-495-11	FILM 0.068uF 5% 50V	
C1057	1-136-495-11	FILM 0.068uF 5% 50V	
C1081	1-126-964-11	ELECT 10uF 20% 50V	
C1082	1-162-286-31	CERAMIC 220PF 10% 50V	
C1083	1-162-282-31	CERAMIC 100PF 10% 50V	
C1084	1-126-947-11	ELECT 47uF 20% 10V	
C1086	1-136-495-11	FILM 0.068uF 5% 50V	
C1087	1-136-495-11	FILM 0.068uF 5% 50V	
C1100	1-164-159-11	CERAMIC 0.1uF 50V	
C1101	1-164-159-11	CERAMIC 0.1uF 50V	
C1102	1-164-159-11	CERAMIC 0.1uF 50V	
C1103	1-164-159-11	CERAMIC 0.1uF 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SURROUND AMP

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN1002	1-778-982-11	CONNECTOR, BOARD TO BOARD 13P			
CN1003	1-770-725-11	CONNECTOR, BOARD TO BOARD 4P			
		< DIODE >			
D1001	8-719-911-19	DIODE 1SS133T-72			
D1002	8-719-911-19	DIODE 1SS133T-72			
D1051	8-719-911-19	DIODE 1SS133T-72			
D1061	8-719-911-19	DIODE 1SS133T-72			
D1062	8-719-911-19	DIODE 1SS133T-72			
D1081	8-719-911-19	DIODE 1SS133T-72			
		< IC >			
IC1001	8-749-017-19	IC STK443-050			
		< TRANSISTOR >			
Q1001	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q1051	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q1061	8-729-119-76	TRANSISTOR	2SA1175TP-HFE		
Q1063	8-729-900-36	TRANSISTOR	BA1F4M-TP		
Q1081	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q1092	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q1093	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
		< RESISTOR >			
R1001	1-249-417-11	CARBON	1K	5% 1/4W	
R1002	1-249-438-11	CARBON	56K	5% 1/4W	
R1003	1-249-415-11	CARBON	680	5% 1/4W	(EXCEPT TH)
R1003	1-249-417-11	CARBON	1K	5% 1/4W	(TH)
R1004	1-249-438-11	CARBON	56K	5% 1/4W	
⚠R1005	1-233-352-41	ENCAPSULATED COMPONENT 0.22		2W	
R1006	1-249-417-11	CARBON	1K	5% 1/4W	
R1007	1-249-431-11	CARBON	15K	5% 1/4W	
R1008	1-249-441-11	CARBON	100K	5% 1/4W	
R1009	1-260-076-11	CARBON	10	5% 1/2W	
R1010	1-249-437-11	CARBON	47K	5% 1/4W	
⚠R1031	1-212-881-11	FUSIBLE	100	5% 1/4W	F
⚠R1032	1-212-881-11	FUSIBLE	100	5% 1/4W	F
⚠R1033	1-202-972-61	FUSIBLE	1	5% 1/4W	F
R1047	1-249-429-11	CARBON	10K	5% 1/4W	
R1051	1-249-417-11	CARBON	1K	5% 1/4W	
R1052	1-249-438-11	CARBON	56K	5% 1/4W	
R1053	1-249-415-11	CARBON	680	5% 1/4W	(EXCEPT TH)
R1053	1-249-417-11	CARBON	1K	5% 1/4W	(TH)
R1054	1-249-438-11	CARBON	56K	5% 1/4W	
⚠R1055	1-233-352-41	ENCAPSULATED COMPONENT 0.22		2W	
R1056	1-249-417-11	CARBON	1K	5% 1/4W	
R1057	1-249-431-11	CARBON	15K	5% 1/4W	
R1058	1-249-441-11	CARBON	100K	5% 1/4W	
R1059	1-260-076-11	CARBON	10	5% 1/2W	
R1060	1-249-438-11	CARBON	56K	5% 1/4W	
⚠R1061	1-215-888-00	METAL OXIDE	220	5% 2W	F
⚠R1062	1-215-888-00	METAL OXIDE	220	5% 2W	F
R1063	1-249-429-11	CARBON	10K	5% 1/4W	
R1065	1-249-433-11	CARBON	22K	5% 1/4W	
R1081	1-249-417-11	CARBON	1K	5% 1/4W	
R1082	1-249-438-11	CARBON	56K	5% 1/4W	
R1083	1-247-834-11	CARBON	1.3K	5% 1/4W	
R1084	1-249-438-11	CARBON	56K	5% 1/4W	
⚠R1085	1-233-352-41	ENCAPSULATED COMPONENT 0.22		2W	
R1086	1-249-417-11	CARBON	1K	5% 1/4W	
R1087	1-249-431-11	CARBON	15K	5% 1/4W	
R1088	1-249-441-11	CARBON	100K	5% 1/4W	
R1089	1-260-076-11	CARBON	10	5% 1/2W	
R1090	1-249-439-11	CARBON	68K	5% 1/4W	
R1092	1-249-441-11	CARBON	100K	5% 1/4W	
R1093	1-249-441-11	CARBON	100K	5% 1/4W	
R1094	1-249-439-11	CARBON	68K	5% 1/4W	
R1095	1-249-433-11	CARBON	22K	5% 1/4W	
		< RELAY >			
RY1061	1-515-920-11	RELAY (24V)			
RY1062	1-515-920-11	RELAY (24V)			
		< THERMISTOR (POSITIVE) >			
THP092	1-807-796-11	THERMISTOR			
**********					
		MISCELLANEOUS			
		**********			
1	1-773-178-11	WIRE (FLAT TYPE) (23 CORE) (AEP, UK)			
1	1-773-210-11	WIRE (FLAT TYPE) (25 CORE)			(EXCEPT AEP, UK)
⚠6	1-526-794-11	OUTLET, AC (AEP, UK, EA, SP, AUS)			
⚠6	1-526-882-00	OUTLET, AC (E, TH, MX)			
⚠6	1-815-114-11	OUTLET, AC (KR)			
⚠109	1-769-079-21	CORD, POWER (KR)			
⚠109	1-777-071-81	CORD, POWER (AEP, E, EA, SP)			
⚠109	1-783-203-11	CORD, POWER (AUS)			
⚠109	1-790-226-11	CORD, POWER (UK)			
⚠109	1-791-901-11	CORD, POWER (TH, MX)			
110	1-500-386-11	FILTER, CLAMP (FERRITE CORE)			
M1	1-763-072-11	FAN, D. C.			
⚠T911	1-435-934-11	TRANSFORMER, POWER (AEP, UK)			
⚠T911	1-435-935-11	TRANSFORMER, POWER (EXCEPT AEP, UK)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
#2	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3			
#3	7-685-872-09	SCREW +BVTT 3X8 (S)			
#4	7-685-871-01	SCREW +BVTT 3X6 (S)			
**********					
		ACCESSORIES			
		**********			
⚠	1-569-008-21	ADAPTOR, CONVERSION (E, EA, SP)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.09	New

DVP-S9

SERVICE MANUAL

Ver 1.0 2001.09

AEP Model
UK Model
E Model
Australian Model

DVP-S9 is the DVD/Video CD/CD player section in MHC-S9D.

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM63D
Optical Pick-up Name	KHM-240AAA

SPECIFICATIONS

DVD/Video CD/CD player section

Laser	Semiconductor laser (λ=660 nm/780 nm) Emission duration: continuous
Frequency response	DVD (PCM 48 kHz): 2 Hz – 22 kHz = (±1 dB) CD: 2Hz – 20 kHz = (±1 dB)
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Video color system format	NTSC, PAL

OPTICAL OUT
(Square optical connector jack, rear panel)

General

Power requirements	
European model:	230 V AC, 50/60 Hz
Australian model:	230 – 240 V AC, 50/60 Hz
Mexican model:	120 V AC, 60 Hz
Korean model:	220 V AC, 60 Hz
Thailand model:	220 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 – 240 V AC, 50/60 Hz
Dimensions (w/h/d)	Approx. 280 x 108 x 330 mm
Mass	Approx. 2.9 kg

Design and specifications are subject to change without notice.

DVD/VIDEO CD/CD PLAYER

9-873-280-01
2001I0500-1
© 2001.9

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

The use of optical instruments with this product will increase eye hazard.
As the laser beam used in this CD/DVD Player is harmful to eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

The following caution label is located inside the apparatus.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHEREITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board. (within 3 times)
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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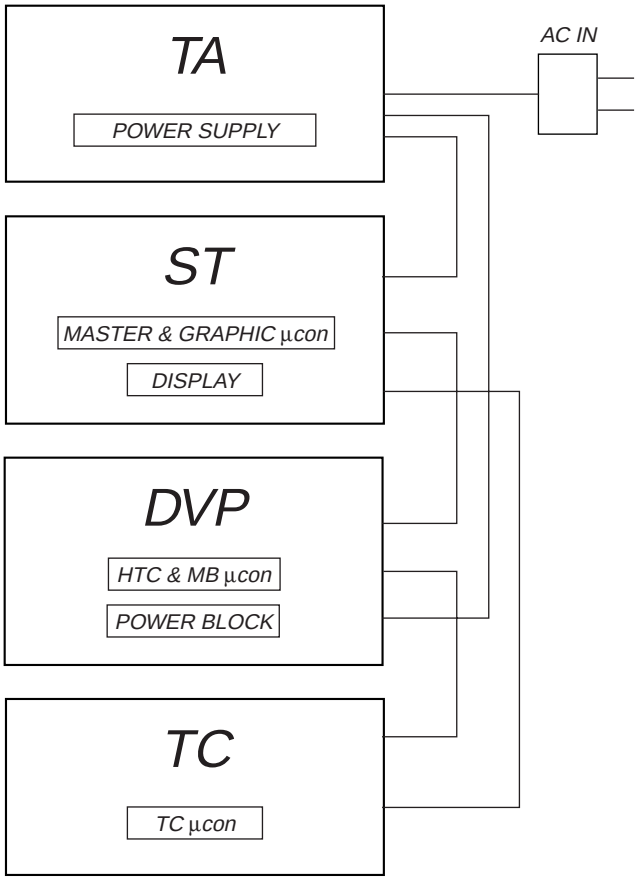
SECTION 1
SERVICING NOTES

This set is a component of the MHC-S9D.
The MHC-S9D system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.
In performing the repair, connect all components with the system cables.

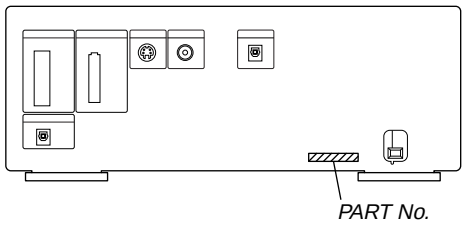
Note: The precaution to the users is described on the label stuck on the back panel (DVD/video CD/CD player) and in the troubleshooting section in the Operation Manual.

System Configuration:



MODEL IDENTIFICATION

- Back Panel -



Model	PART No.
AEP model	4-236-808-0
UK model	4-236-808-1
Korean model	4-236-808-3
Singapore model	4-236-808-4
Saudi Arabia model	4-236-808-5
Austrarian model	4-236-808-6
Thai model	4-236-808-7
E model	4-236-808-8
Mexican model	4-236-808-9

SECTION 2
GENERAL

This section is extracted from instruction manual.

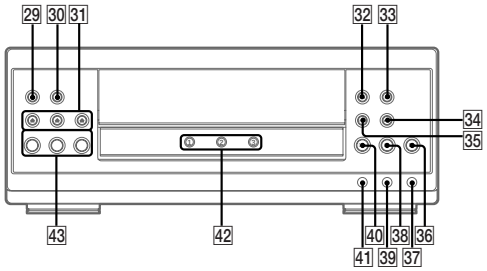
Parts Identification

The items are arranged in alphabetical order.

Refer to the pages indicated in parentheses ( ) for details.

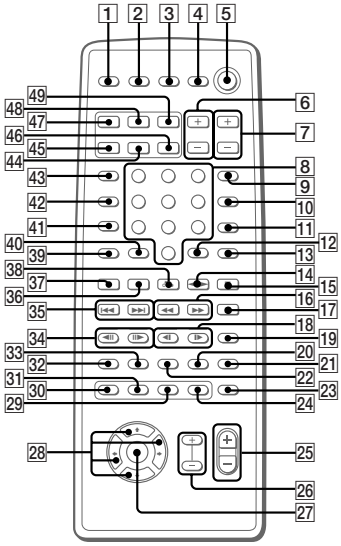
Main unit

DVD/VIDEO CD/CD player



DISC 1–3 43 (25, 26)
DISC 1–3 indicators 42
DISC 1–3 ⏏ (eject) 31 (25, 26)
NEXT 39 (26, 27)
PLAY MODE 29 (25, 28, 29, 46)
PREV 41 (26, 27)
REPEAT 30 (12, 30)
RETURN ↩ 37 (12, 27, 39, 40)
► SELECT (play) 40 (25–27, 41, 55, 60)
❚❚ (pause) 38 (26)
■ (stop) 36 (12, 26, 27, 30, 38, 45, 55, 61)
I◄◄ (go back) 35 (26, 28, 30)
►►I (go forward) 34 (26, 28, 30)
◄◄ (rewind) 32 (26)
►► (fast forward) 33 (26)

Remote control



ANGLE 32 (37)
AUDIO 22 (34)
CLEAR 12 (22, 29, 30, 36)
CLOCK/TIMER SELECT 3 (47, 56)
CLOCK/TIMER SET 2 (17, 47, 56)
DBFB 41 (48)
D.SKIP 9 (26)
DIGITAL 44 (57)
DISPLAY 47 (17, 31, 32, 43, 54)
DVD DISPLAY 23 (18, 19, 30, 32–34, 36–40)
DVD MENU 21 (27)
DVD SET UP 19 (18, 19, 24, 39)
ENTER 27
EQ 31 (52)
EQ ON/OFF 29 (53)
FILE SELECT +/– 26 (48, 49, 53)
FUNCTION 43 (18, 25, 27, 28, 36, 45, 46, 55, 57)
GROOVE 42 (48)
KARAOKE PON (Except for North American and European models) 39 (54)
MD 46 (57)
Numeric buttons 8 (28, 30)
PLAY MODE 11 (25, 28, 29, 46)
REPEAT 10 (30)
RETURN ↩ 13 (27, 39, 40)
SELECT DVD ► 36 (20, 25, 27, 29, 30)
SET UP 24 (14, 16, 51, 53, 54)
SLEEP 1 (55)
SLOW ◄II/II► 18 (26)
SPECTRUM ANALYZER 48 (54)
STEP ◄II/II► 34 (26)
SUBTITLE 33 (37)
SUR 30 (51)
TAPE A ◄■► 38 (44)
TAPE B ◄■► 14 (44, 45)
TITLE 20 (27)
TUNER/BAND 37 (42)
TV I/⏻ 4 (13)
TV CH +/– 7 (13)
TV/VIDEO 49 (13)
TV VOL +/– 6 (13)
VIDEO 45 (57)
VOL +/– 25

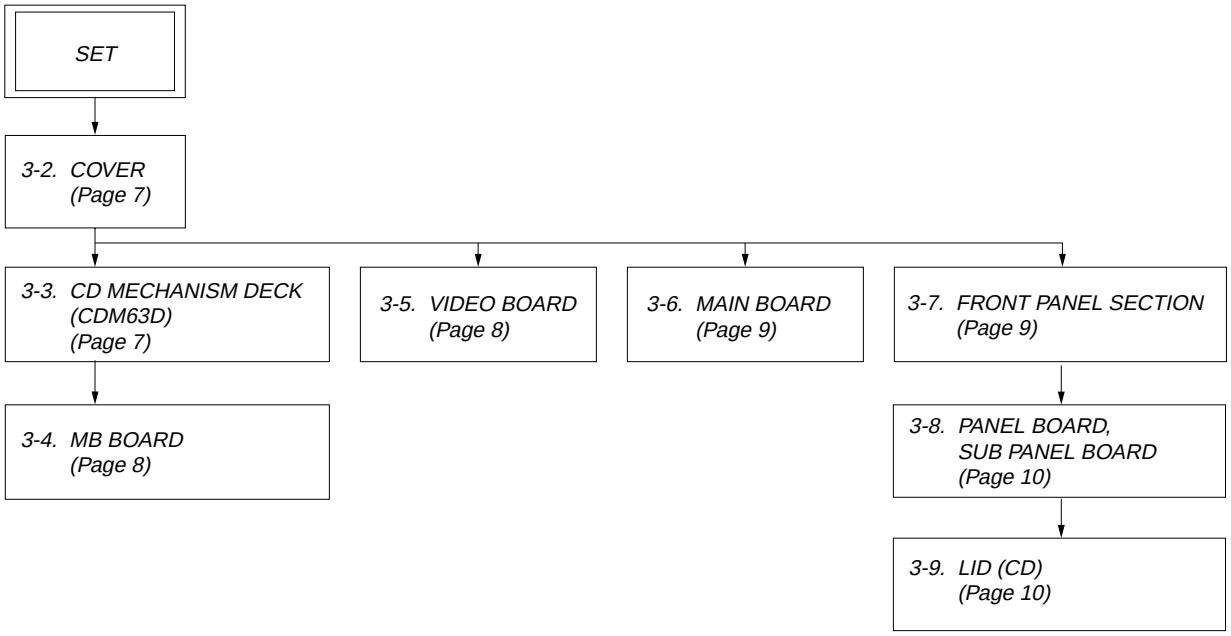
BUTTON DESCRIPTIONS

I/⏻ (power) 5
❚❚ (pause) 17
■ (stop) 15
◄◄/►► (rewind/fast forward), TUNING –/+ 16
I◄◄ /►►I (go back/go forward), PRESET –/+, PREV/NEXT 35
↑/↓/←/→ 28
>10 40

SECTION 3
DISASSEMBLY

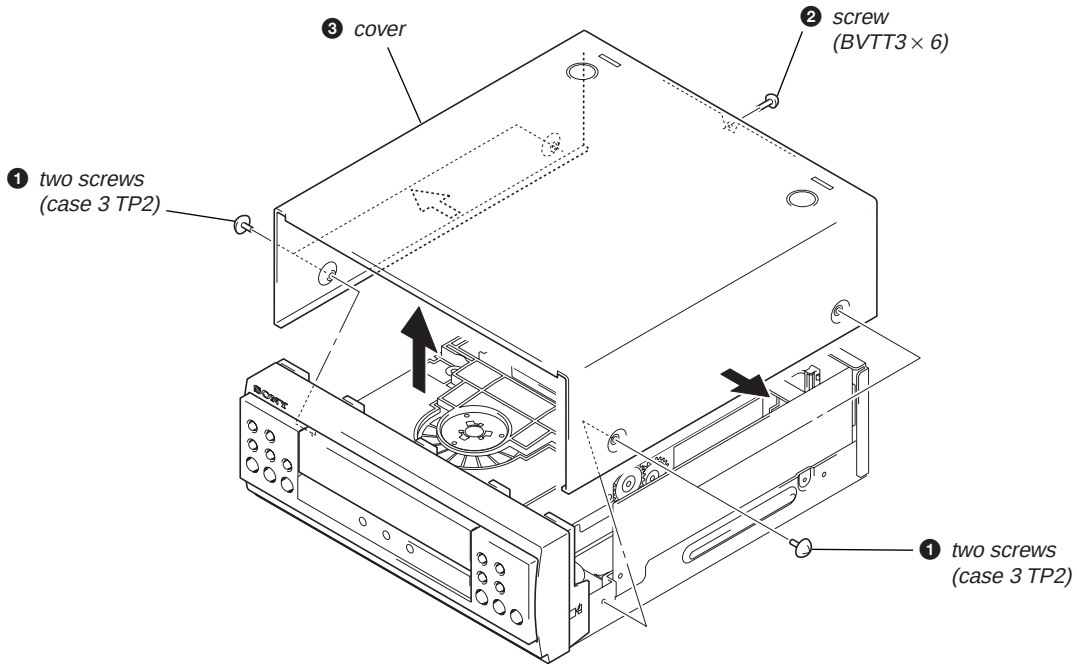
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

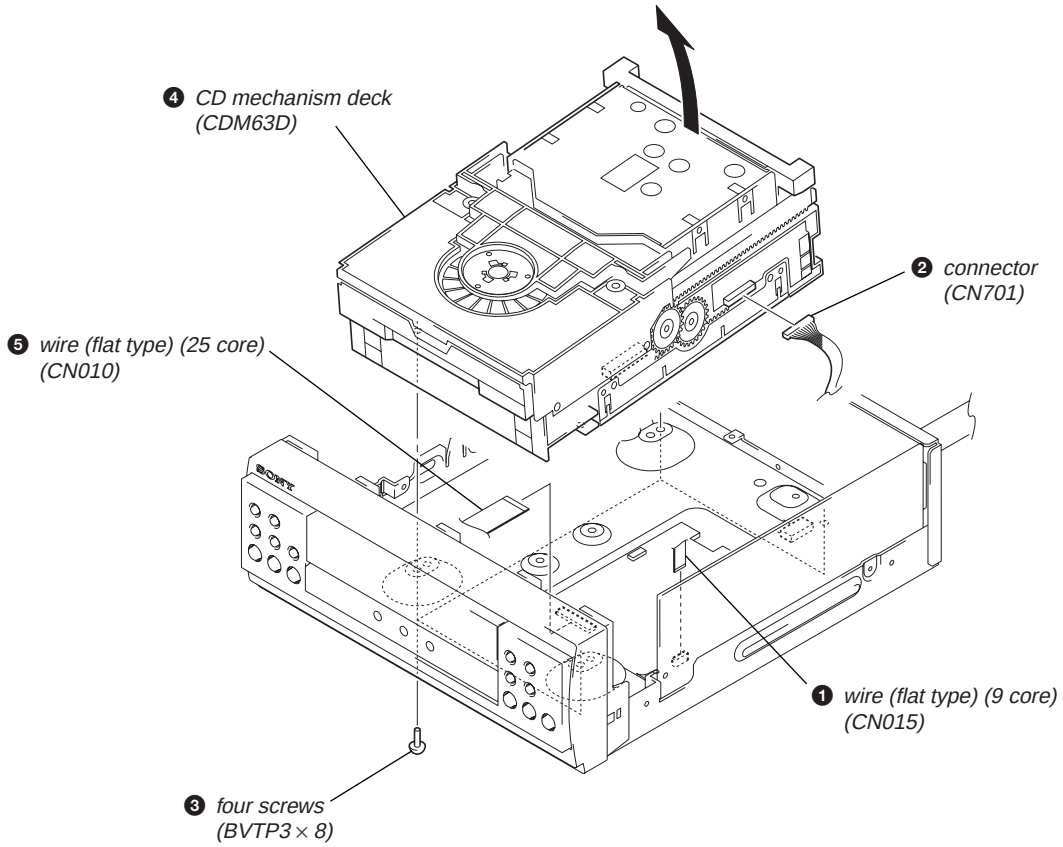


Note: Follow the disassembly procedure in the numerical order given.

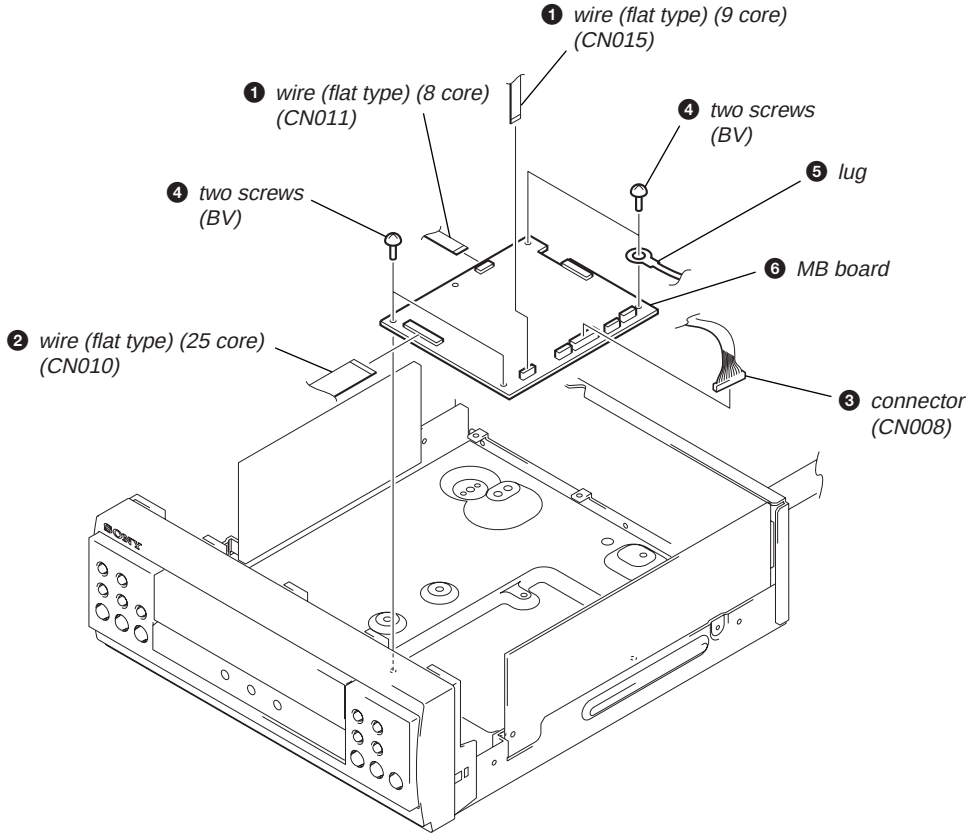
3-2. COVER



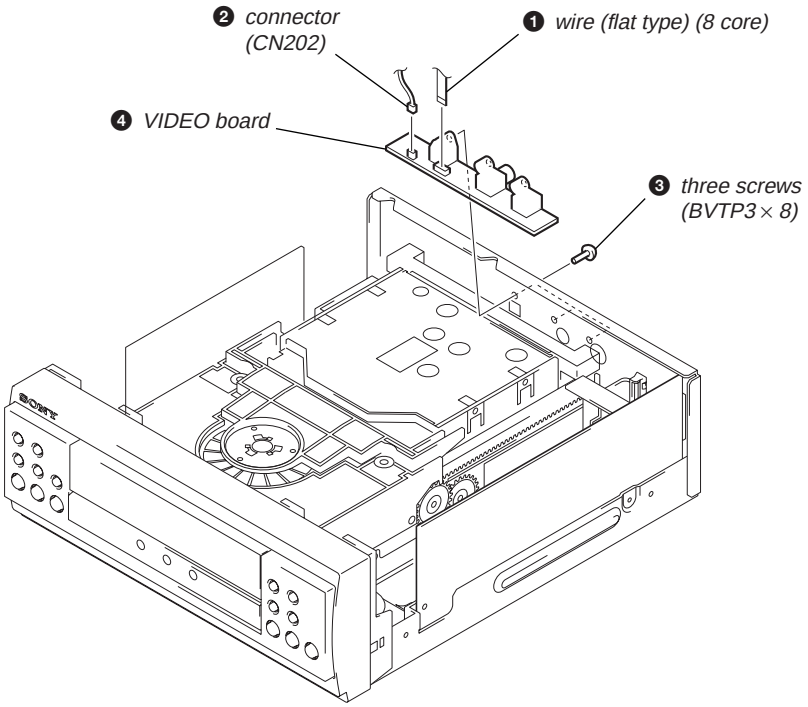
3-3. CD MECHANISM DECK (CDM63D)



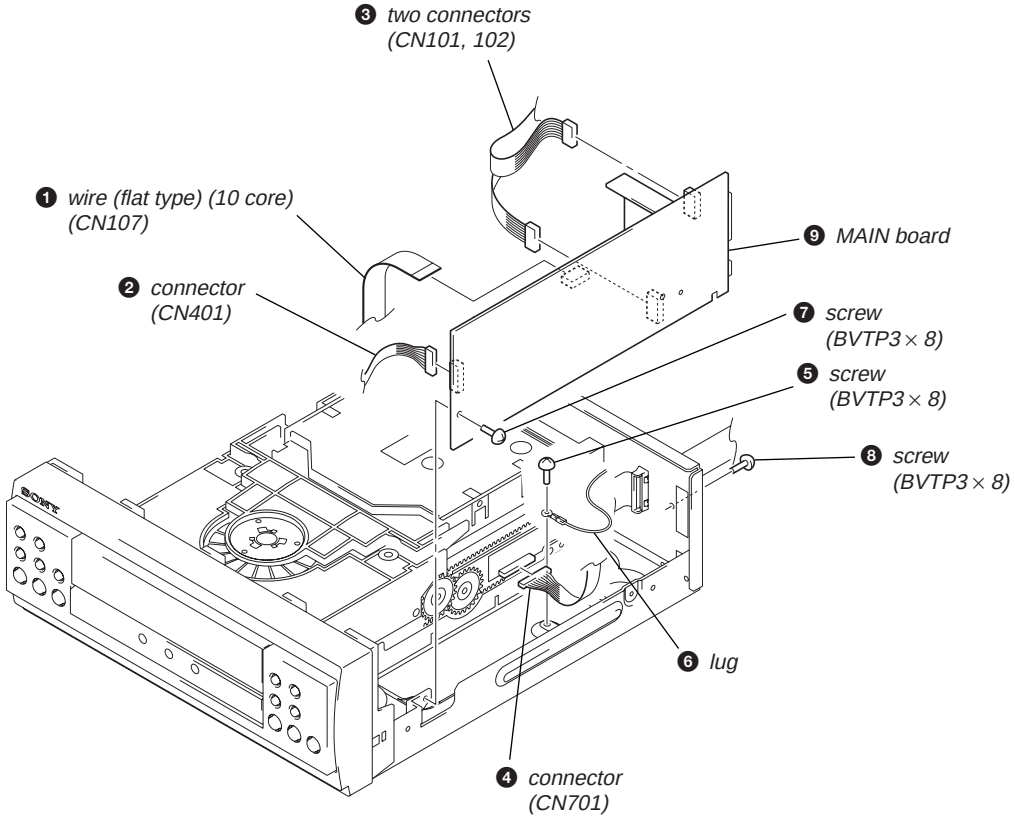
3-4. MB BOARD


❶ wire (flat type) (9 core) (CN015)
❶ wire (flat type) (8 core) (CN011)
❹ two screws (BV)
❺ lug
❹ two screws (BV)
❻ MB board
❷ wire (flat type) (25 core) (CN010)
❸ connector (CN008)

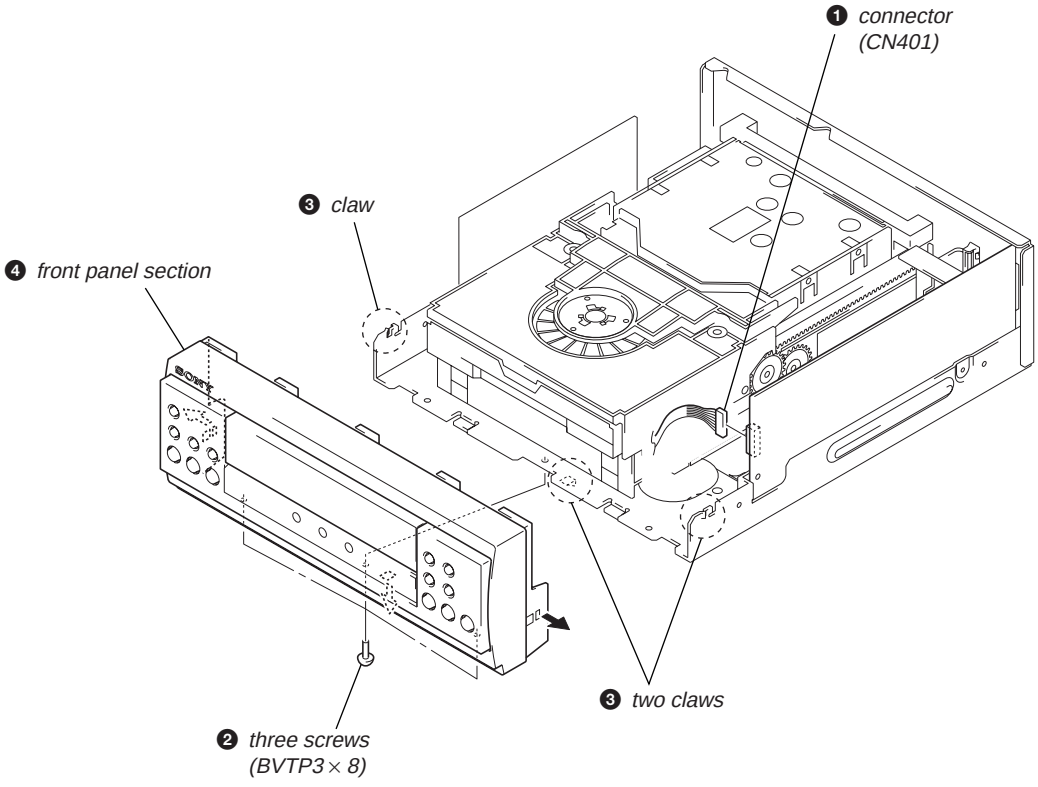
3-5. VIDEO BOARD



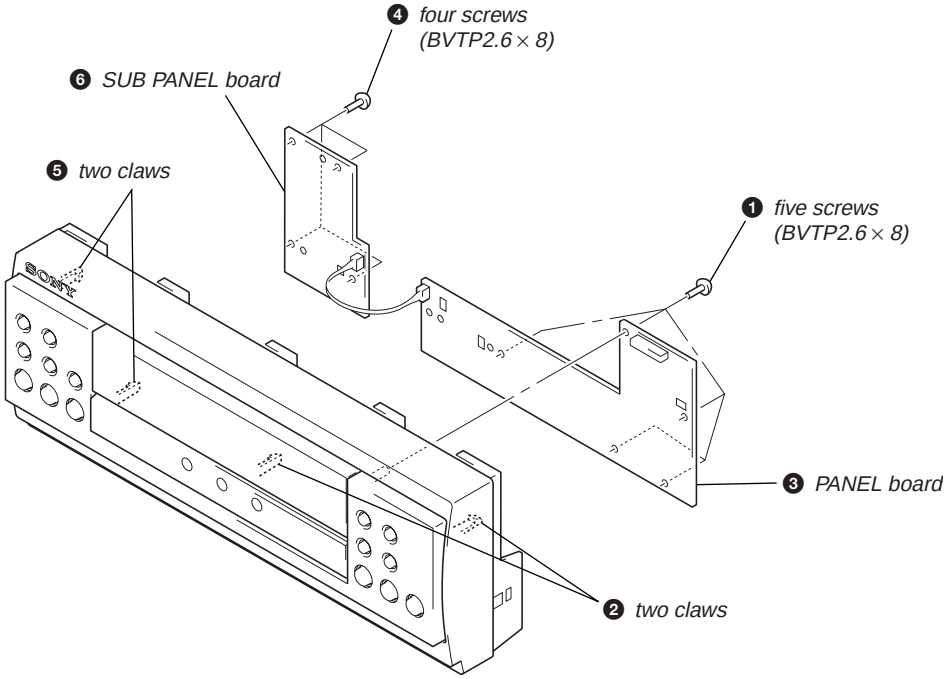
3-6. MAIN BOARD


❸ two connectors (CN101, 102)
❶ wire (flat type) (10 core) (CN107)
❷ connector (CN401)
❾ MAIN board
❼ screw (BVTP3 × 8)
❺ screw (BVTP3 × 8)
❽ screw (BVTP3 × 8)
❻ lug
❹ connector (CN701)

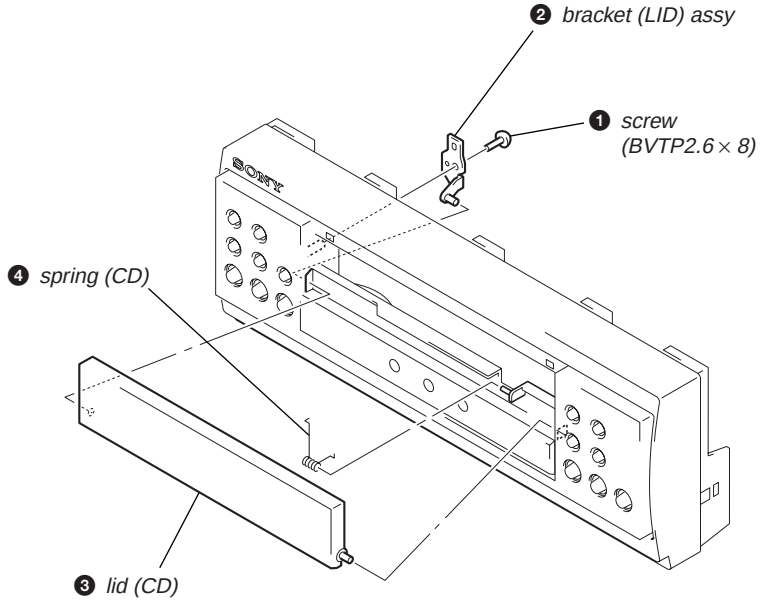
3-7. FRONT PANEL SECTION



3-8. PANEL BOARD, SUB PANEL BOARD



3-9. LID (CD)



SECTION 4
TEST MODE

Note: Use following buttons in the test mode.
no mark : Button of DVD/video CD/CD player (DVP-S9)
*1 : Button of A/V amplifier (TA-S9D)
*2 : Button of tuner (ST-S9)

[Change-over the Color System]

• The color system can be changed over NTSC or PAL.

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. Turn the FUNCTION *1 knob to select "DVD", and press the ■ button.
3. While pressing the both RETURN and REPEAT buttons, turn the power off.
4. Press the I/⏻ *1 button to turn the power on. The color system is changed over.

[Cold Reset]

• The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure 1:

1. Press the I/⏻ *1 button to turn the power on.
2. While pressing the both PLAY MODE and ■ buttons, press the ►► button.
3. The set is reset, and becomes standby state.

Procedure 2:

1. Press the I/⏻ *1 button to turn the power on.
2. While pressing the DIGITAL *1 button, press the DISPLAY *2 button.
3. The set is reset, and becomes standby state.

[DVD Delivery Mode]

• This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. Turn the FUNCTION *1 knob to select "DVD".
3. While pressing the EQ ON/OFF *1 button, press the I/⏻ *1 button.
4. The message "LOCK" is displayed on the fluorescent indicator tube of tuner unit and turn the power off automatically, and the DVD delivery mode is set.

[GC Test Mode]

Enter the GC Test Mode

Procedure 1:

1. Press the I/⏻ *1 button to turn the power on.
2. While pressing the both PLAY MODE and ■ buttons, press the ⏏ (DISC 1) button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Procedure 2:

1. Press the I/⏻ *1 button to turn the power on.
2. While pressing the both STEREO/MONO *2 and CINEMA STUDIO C *1 buttons, press the CLOCK/TIMER *2 button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Version Display Mode

Procedure:

1. Enter the GC test mode.
2. Each time the DISC 1 or TUNER MEMORY *2 button is pressed, microcomputer or mechanism deck version is displayed of each unit.
3. Press the DISC 3 or TUNING + *2 button to detail is displayed the version.

Key Check Mode

Procedure:

1. Enter the GC test mode.
2. Press the DISC 2 or TUNING – *2 button to set the key check mode, and displays "K 0 J 0 V 0" on the fluorescent indicator tube of tuner unit.
3. All buttons are pressed of video CD unit, all LEDs are blinking of video CD unit. (not change the display of fluorescent indicator tube)

Releasing the GC Test Mode

To release from this mode, press three buttons in the same manner as entering this mode or disconnect the power cord.

[DVD Service Mode]

• This mode can run the DVD sled motor optionally. Use this mode, for instance, when cleaning the optical pick-up.

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. Turn the FUNCTION *1 knob to select "DVD".
3. While pressing the both PLAY MODE and ■ buttons, press the I◄◄ button.
4. Set to the DVD service mode.
5. With the DVD in stop status, press the ►► button to move the optical pick-up to outside track, or press the ◄◄ button to inside track.
6. To release from this mode, perform as follows.
   1) Move the optical pick-up to the most inside track.
   2) Disconnect the power cord.

Notes:
- Always move the optical pick-up to most inside track when releasing from this mode. Otherwise, a disc will not be unloaded.
- Do not run the sled motor excessively, otherwise the gear can be chipped.

[DVD Cancellation Mode of Repeat Limitation]

• This mode can cancel the DVD repeat limitation (5 times).

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. Turn the FUNCTION *1 knob to select "DVD".
3. While pressing the both PLAY MODE and ■ buttons, press the REPEAT button.
4. DVD repeat limitation is canceled.
5. To release this mode, disconnect the power cord.

[DVD Disc Tray Lock Mode for Burglary Prevention]

Procedure:

1. Press the I/⏻ *1 button to turn the power on.
2. Turn the FUNCTION *1 knob to select "DVD".
3. While pressing the both PLAY MODE and ■ buttons, press the ◄◄ button, turn the power off.

SECTION 5
ELECTRICAL ADJUSTMENTS

Note: During diagnostic check, the characters and color bars can be seen only with the NTSC monitor. Therefore, for diagnostic check, use the monitor that supports both NTSC and PAL modes

Instruments required:

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) DVD reference disc
   HLX-501 (J-6090-071-A) (dual layer) (NTSC)
   HLX-503 (J-6090-069-A) (single layer) (NTSC)
   HLX-504 (J-6090-088-A) (single layer) (NTSC)
   HLX-505 (J-6090-089-A) (dual layer) (NTSC)
   HLX-506 (J-6090-077-A) (single layer) (PAL)
   HLX-507 (J-6090-078-A) (dual layer) (PAL)

Video Level Adjustment

<Purpose>

This adjustment is made to satisfy the NTSC/PAL standard, and if not adjusted correctly, the brightness will be too large or small.

Signal	Color bars
Test point	VIDEO OUT jack (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV501 (MB board)
Specified Value	$1.0\ ^{+0.04}_{-0.02}$ Vp-p

Procedure:

1. Press the I/⏻ button to turn the power on, and turn the FUNCTION knob to select "DVD" of A/V amplifier (TA-S9D).
2. Adjust the RV501 on the MB board to attain $1.0\ ^{+0.04}_{-0.02}$ Vp-p.

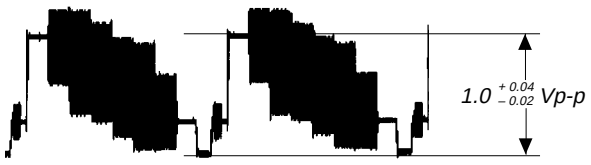


Figure 5-1

Checking S Video Output S-Y

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Signal	Color bars
Test point	S VIDEO OUT (S-Y) jack (75 Ω terminated)
Instrument	Oscilloscope
Specified Value	1.0 ± 0.05 Vp-p

Procedure:

1. Press the I/⏻ button to turn the power on, and turn the FUNCTION knob to select "DVD" of A/V amplifier (TA-S9D).
2. Confirm that the S-Y level is 1.0 ± 0.05 Vp-p.

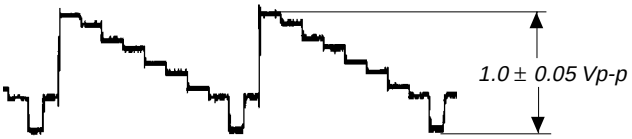


Figure 5-2

Checking S Video Output S-C

<Purpose>

This checks whether the S-C satisfies the NTSC Standard. If it is not correct, the colors will be too dark or light.

Signal	Color bars
Test point	S VIDEO OUT (S-C) jack (75 Ω terminated)
Instrument	Oscilloscope
Specified Value	286 ± 30 mVp-p (NTSC) 300 ± 100 mVp-p (PAL)

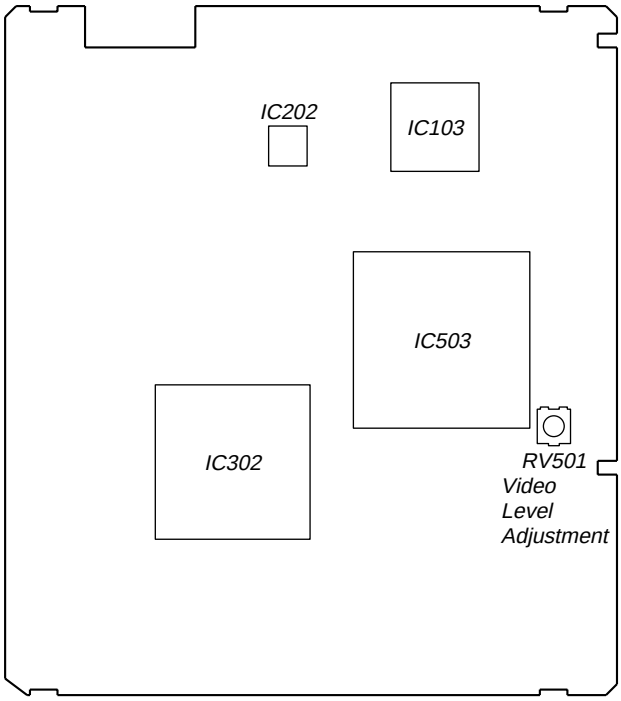
Procedure:

1. Press the I/⏻ button to turn the power on, and turn the FUNCTION knob to select "DVD" of A/V amplifier (TA-S9D).
2. Confirm that the S-C burst is 286 ± 30 mVp-p (NTSC) or 300 ± 100 mVp-p (PAL).

Figure 5-3

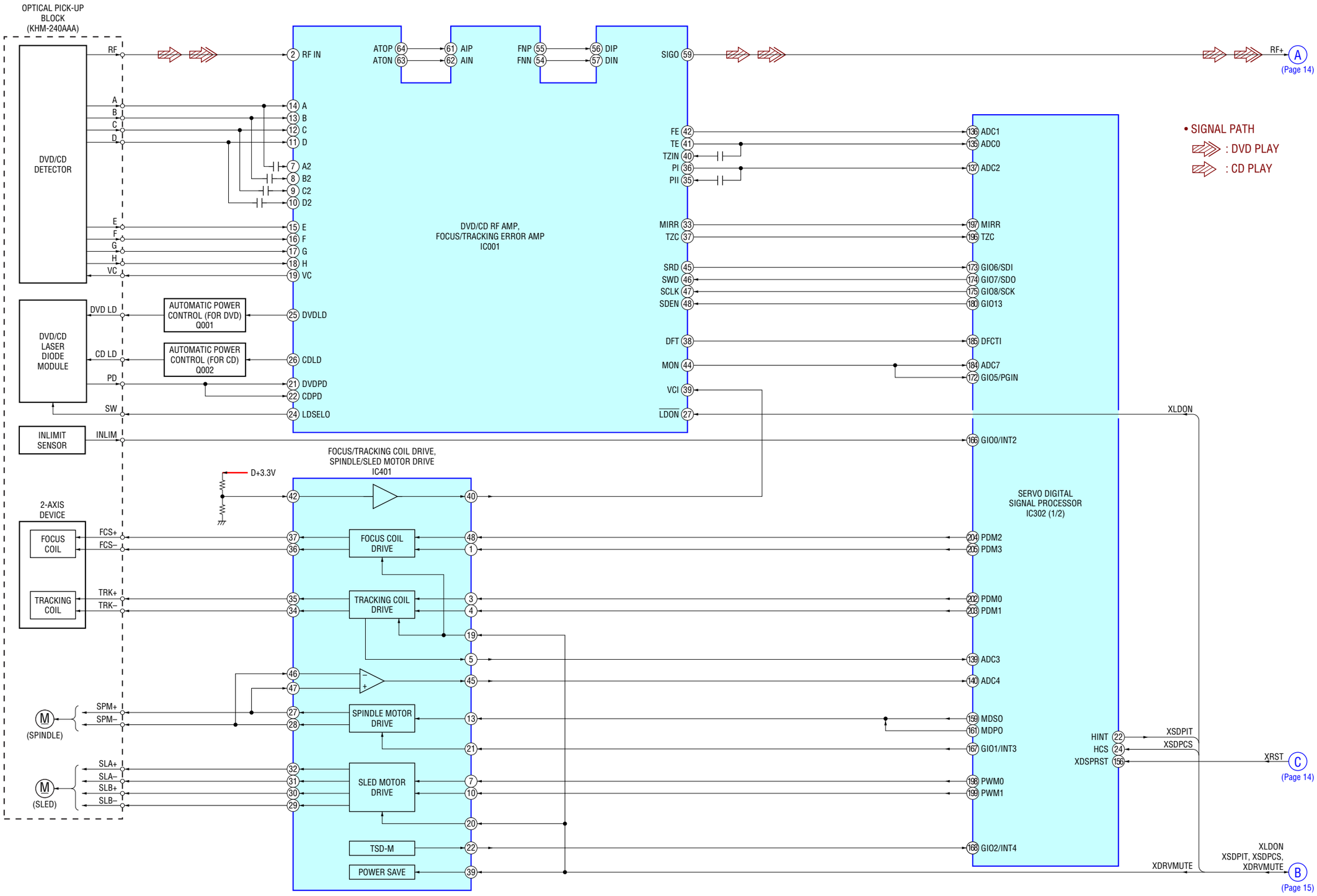
Adjustment Location :

– MB Board (Component Side) –

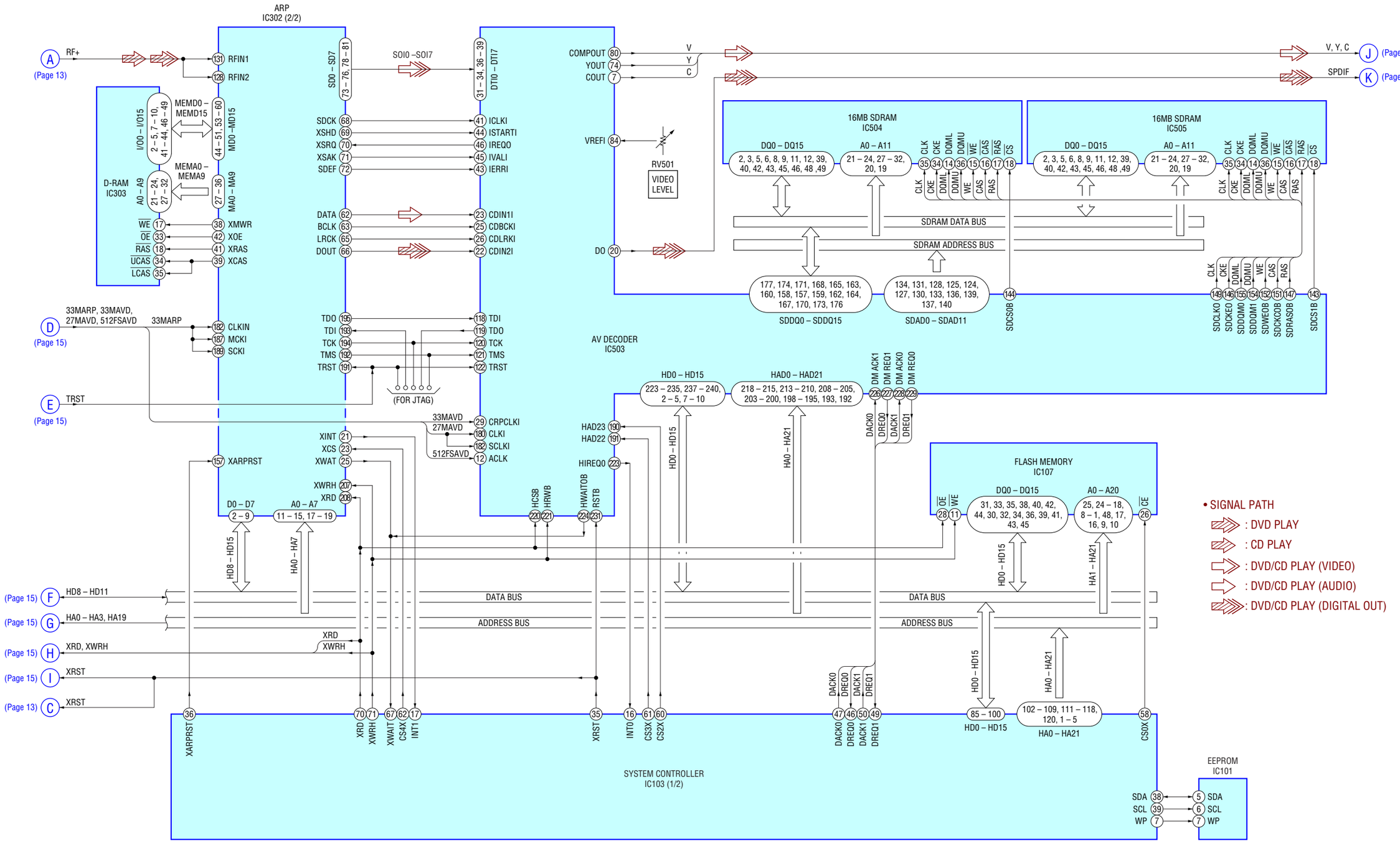


SECTION 6
DIAGRAMS

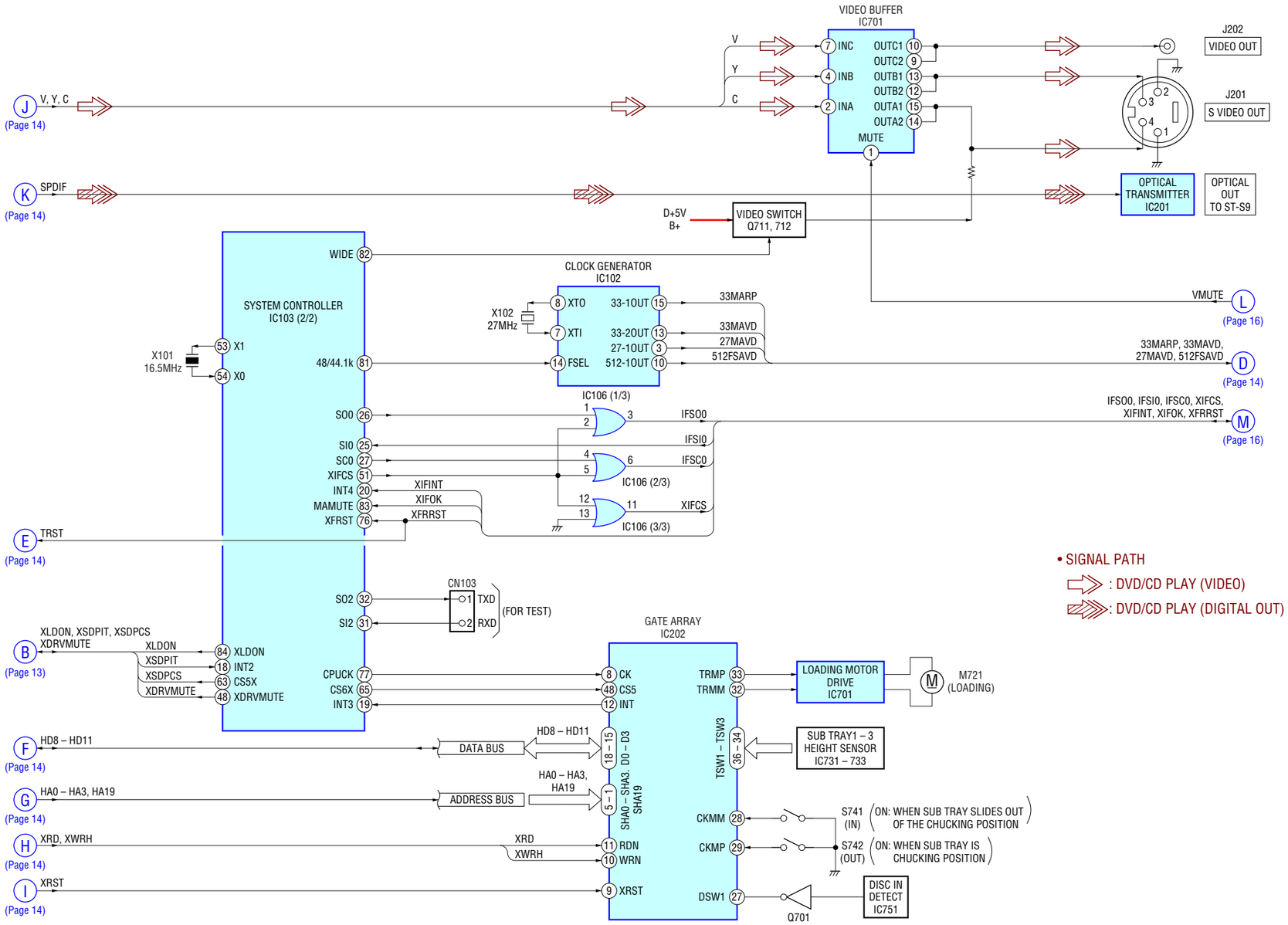
6-1. BLOCK DIAGRAM – RF/SERVO Section –



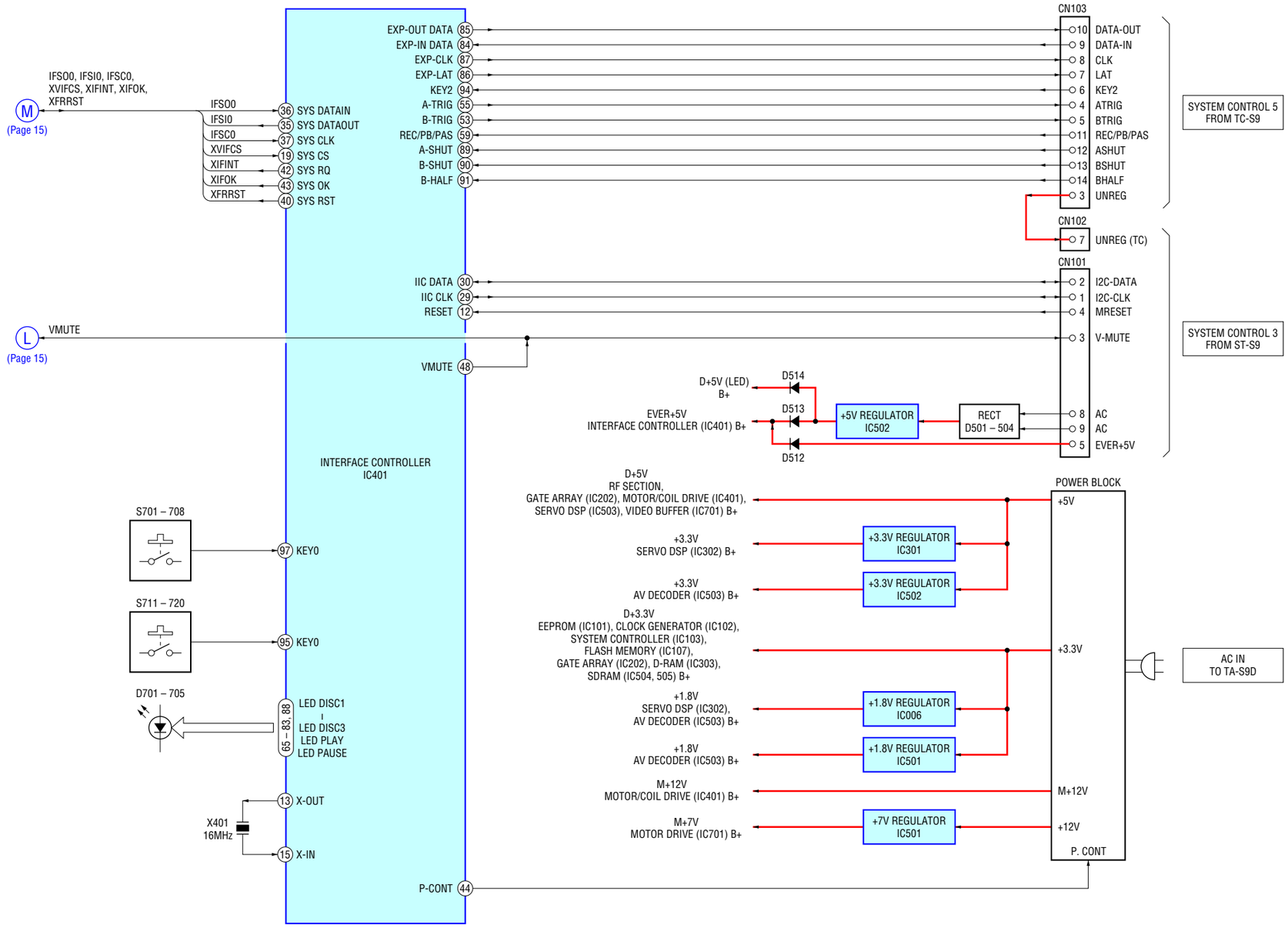
6-2. BLOCK DIAGRAM – MAIN Section (1/2) –



6-3. BLOCK DIAGRAM – MAIN Section (2/2) –



6-4. BLOCK DIAGRAM – INTERFACE CONTROL Section –



6-5. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- MB board is multi-layer board.
  However, the patterns of intermediate-layer not been included in diagram.

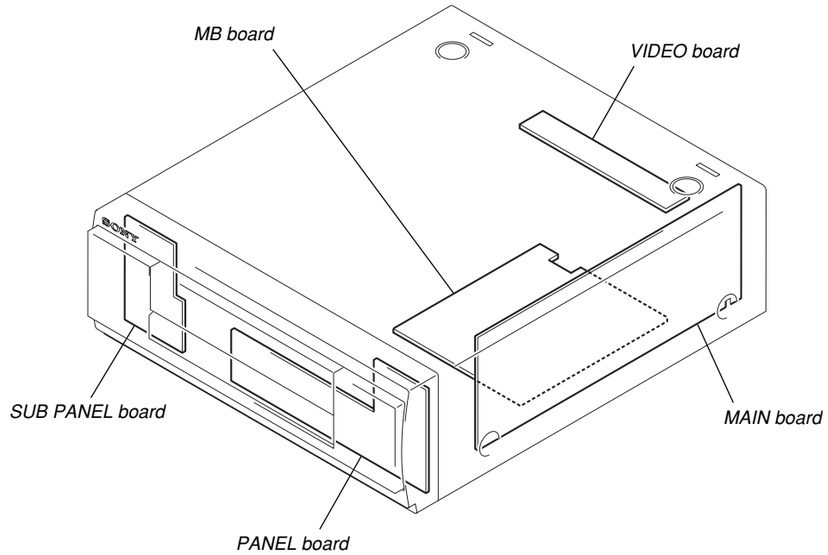
Note on Schematic Diagram:

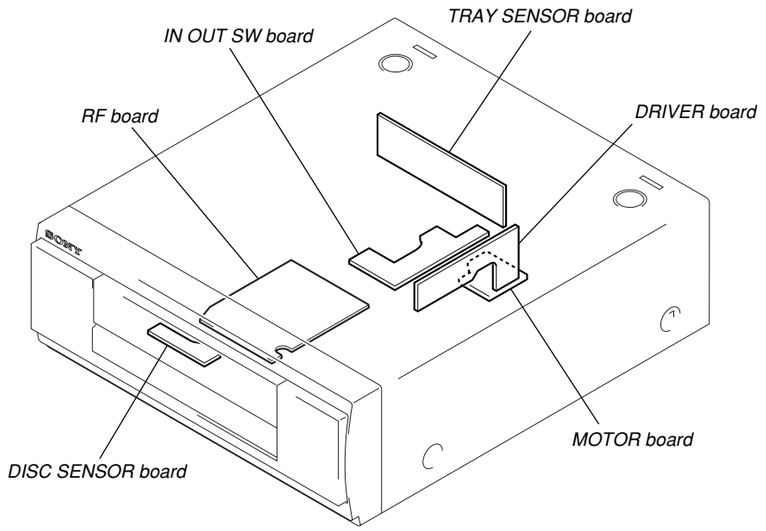
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ( ) : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : DVD PLAY
  : CD PLAY
  : DVD/CD PLAY (VIDEO OUT)
  : DVD/CD PLAY (AUDIO OUT)
  : DVD/CD PLAY (DIGITAL OUT)
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

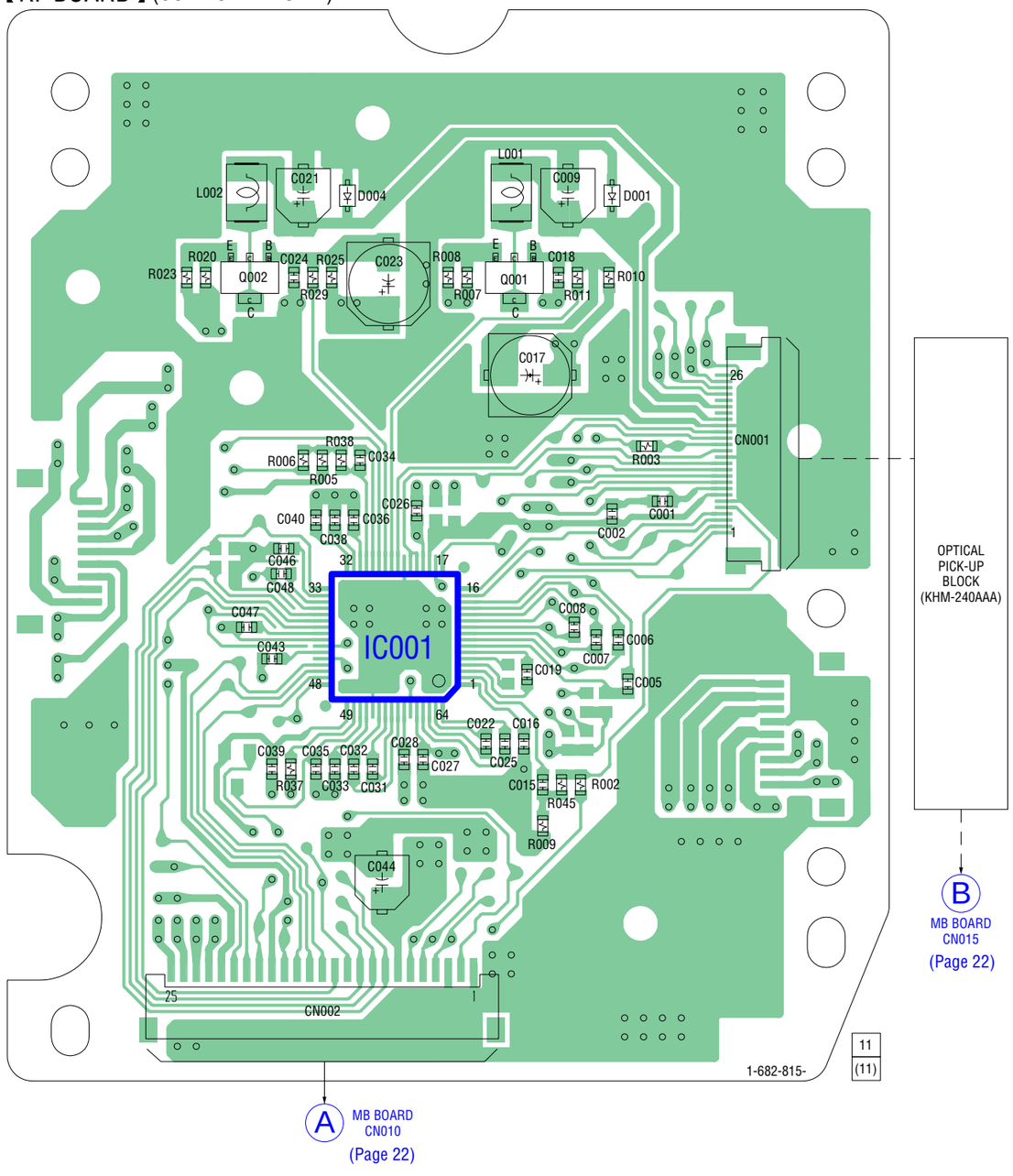
- **Circuit Boards Location**



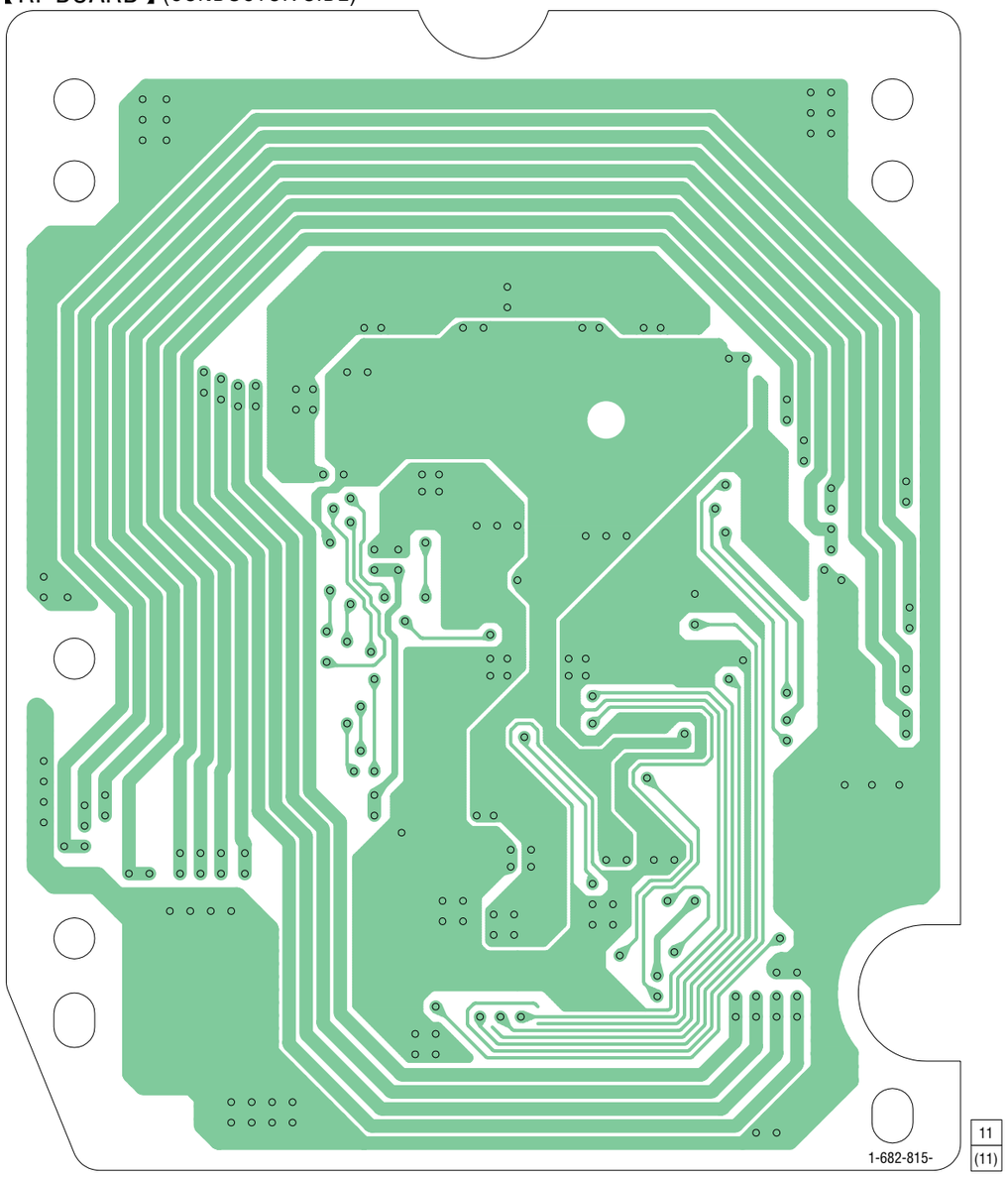


6-6. PRINTED WIRING BOARD – RF Board – • See page 17 for Circuit Boards Location.

【RF BOARD】(COMPONENT SIDE)



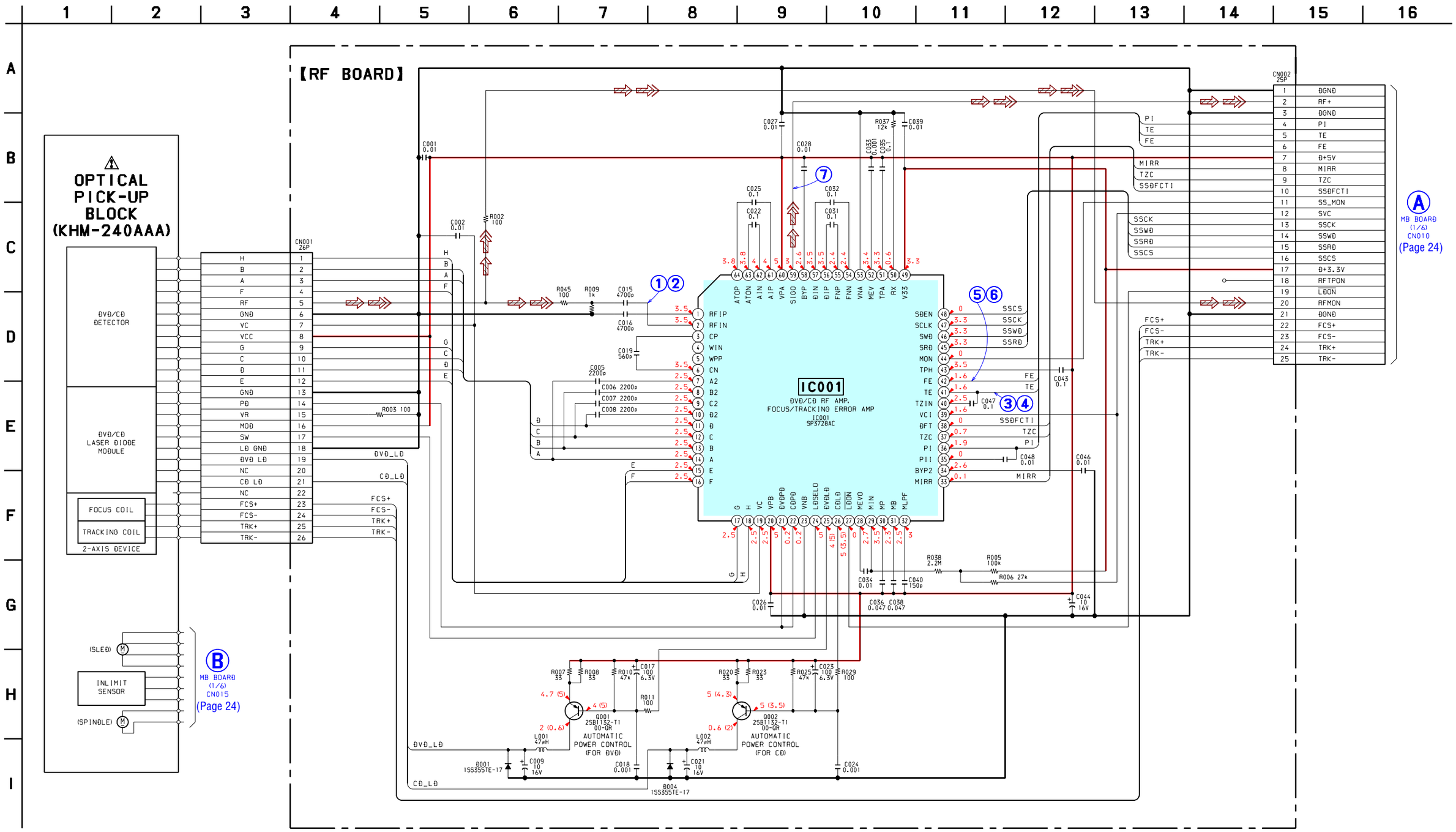
【RF BOARD】(CONDUCTOR SIDE)



- **Semiconductor Location**

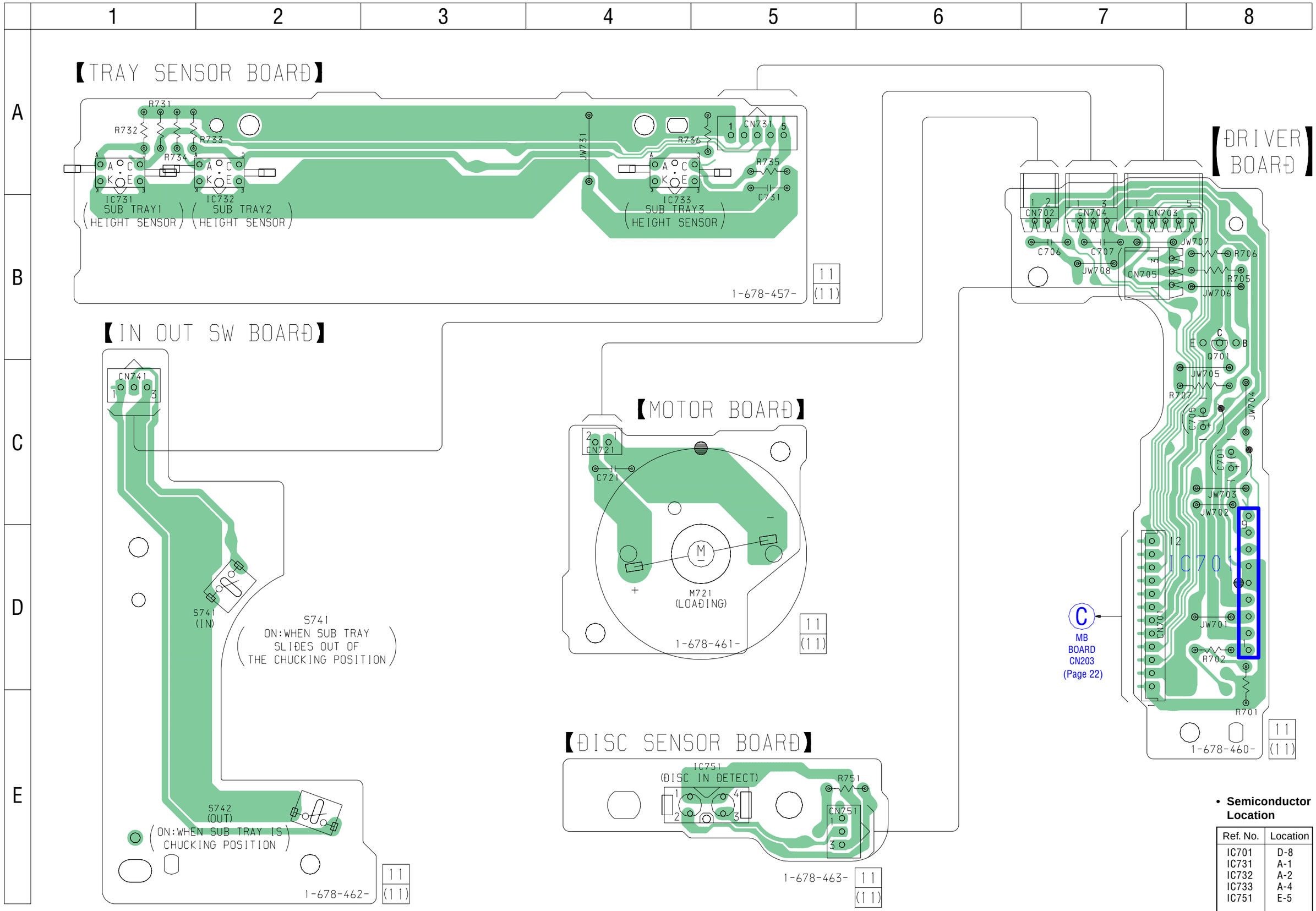
Ref. No.	Location
D001	B-5
D004	B-4
IC001	E-4
Q001	C-5
Q002	C-3

6-7. SCHEMATIC DIAGRAM – RF Board – • See page 34 for Waveforms.



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

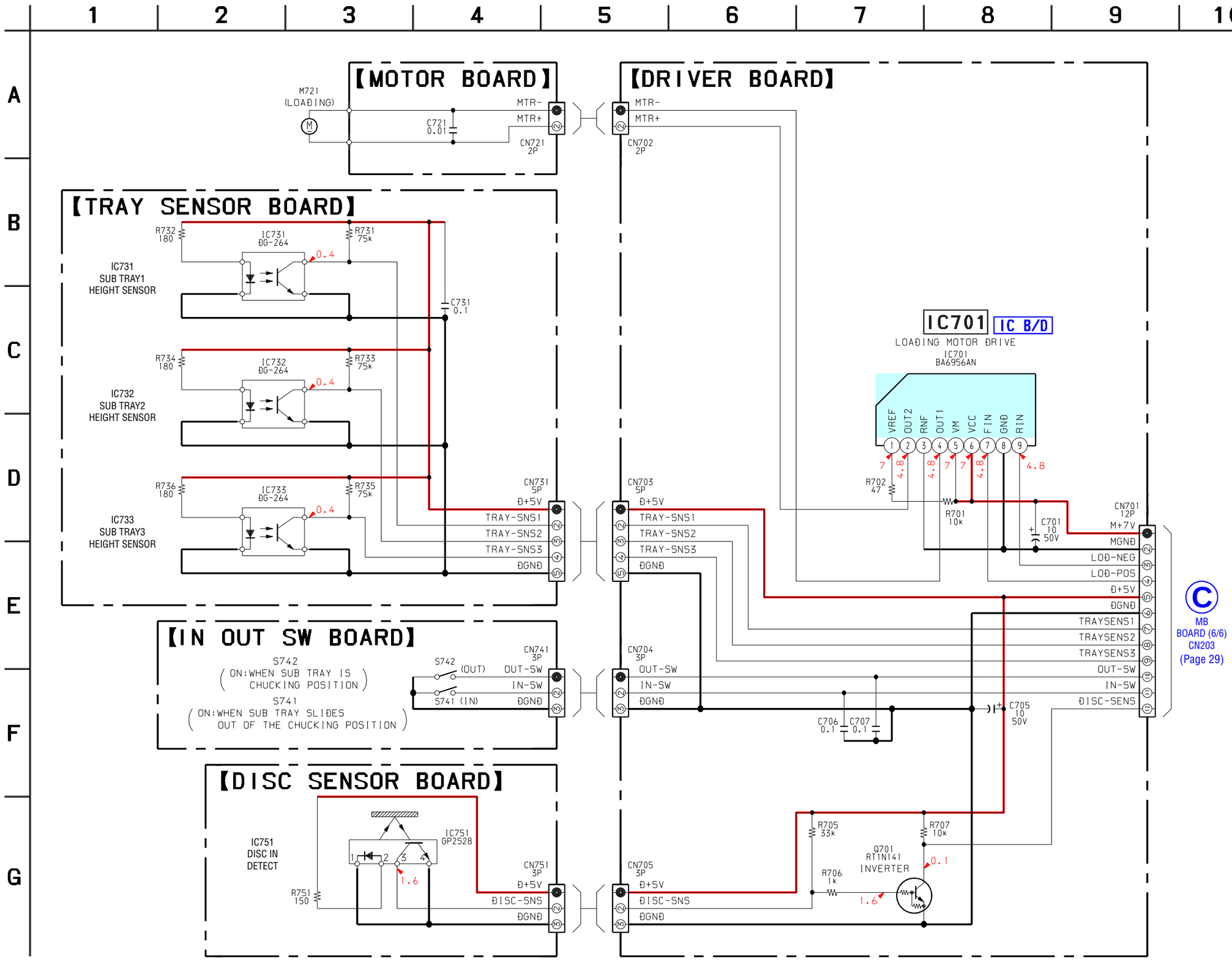
6-8. PRINTED WIRING BOARDS – DISC SENSOR/DRIVER/IN OUT SW/MOTOR/TRAY SENSOR Boards – • See page 17 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
IC701	D-8
IC731	A-1
IC732	A-2
IC733	A-4
IC751	E-5
Q701	B-8

6-9. SCHEMATIC DIAGRAM – DISC SENSOR/DRIVER/IN OUT SW/MOTOR/TRAY SENSOR Boards – • See page 36 for IC Block Diagram.

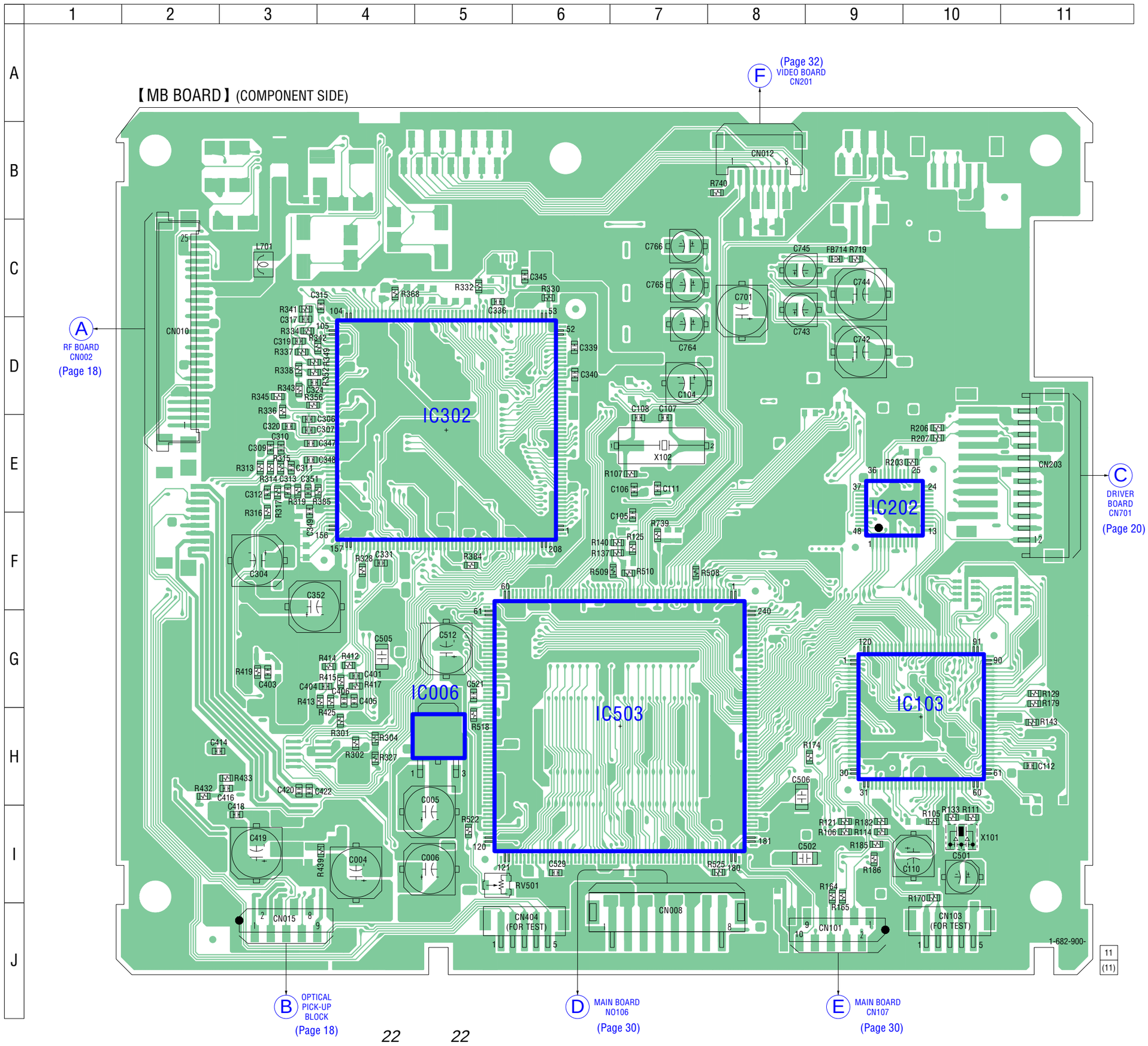


6-10. PRINTED WIRING BOARD – MB Board (Component Side) –

• See page 17 for Circuit Boards Location.

- **Semiconductor Location**

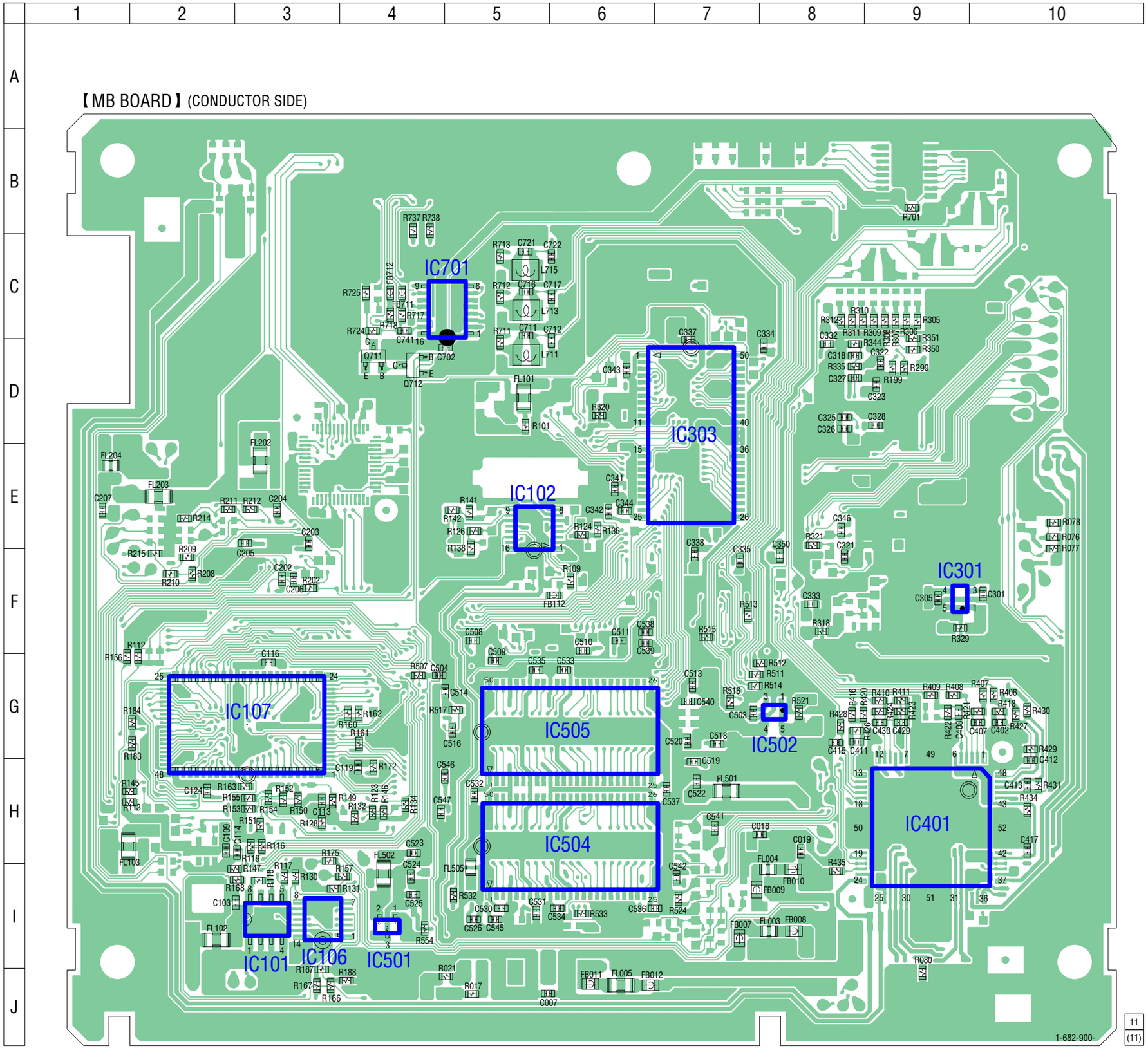
Ref. No.	Location
IC006	H-5
IC103	H-10
IC202	F-10
IC302	E-5
IC503	H-7



6-11. PRINTED WIRING BOARD – MB Board (Conductor Side) –

• See page 17 for Circuit Boards Location.

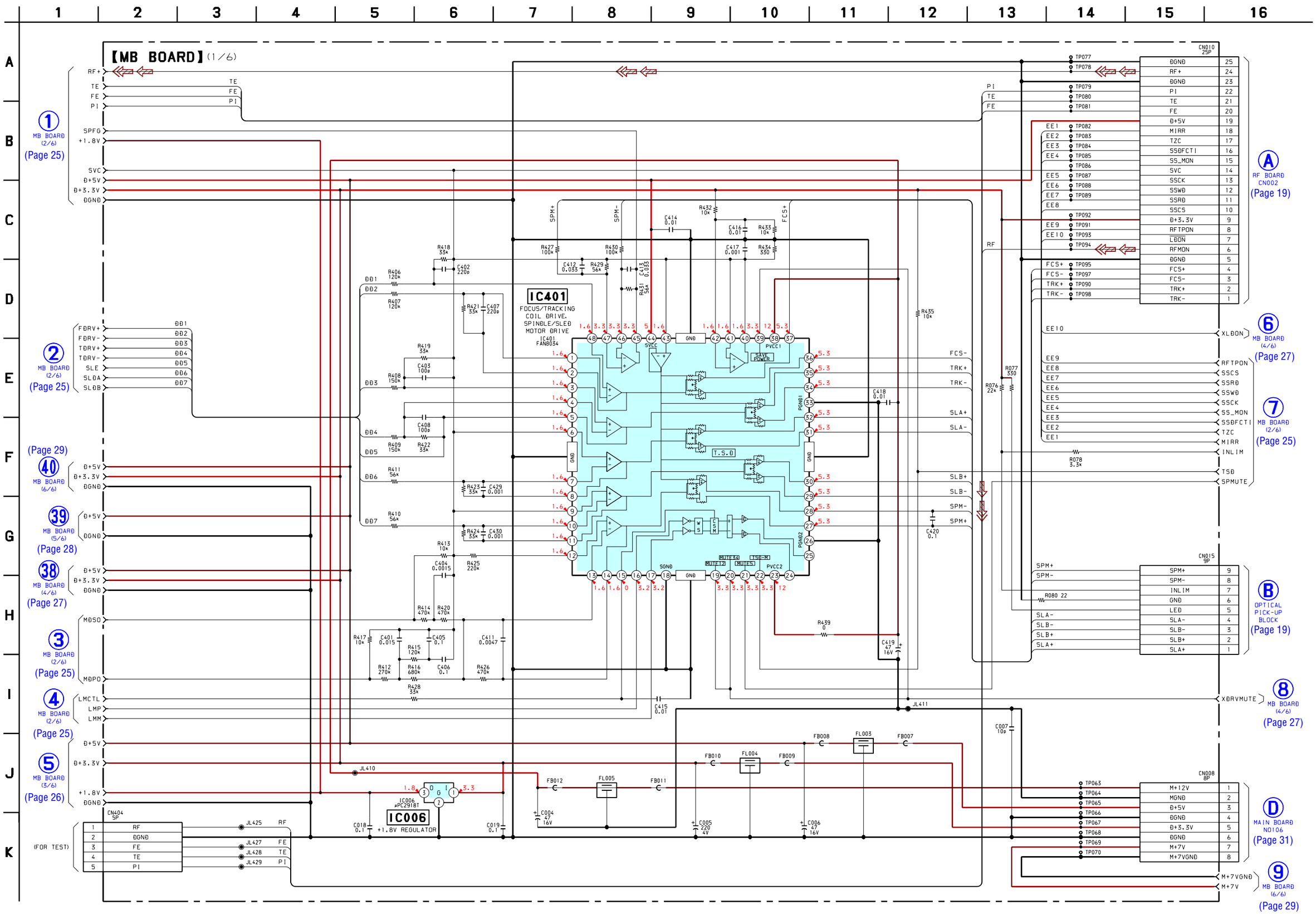
【MB BOARD】(CONDUCTOR SIDE)



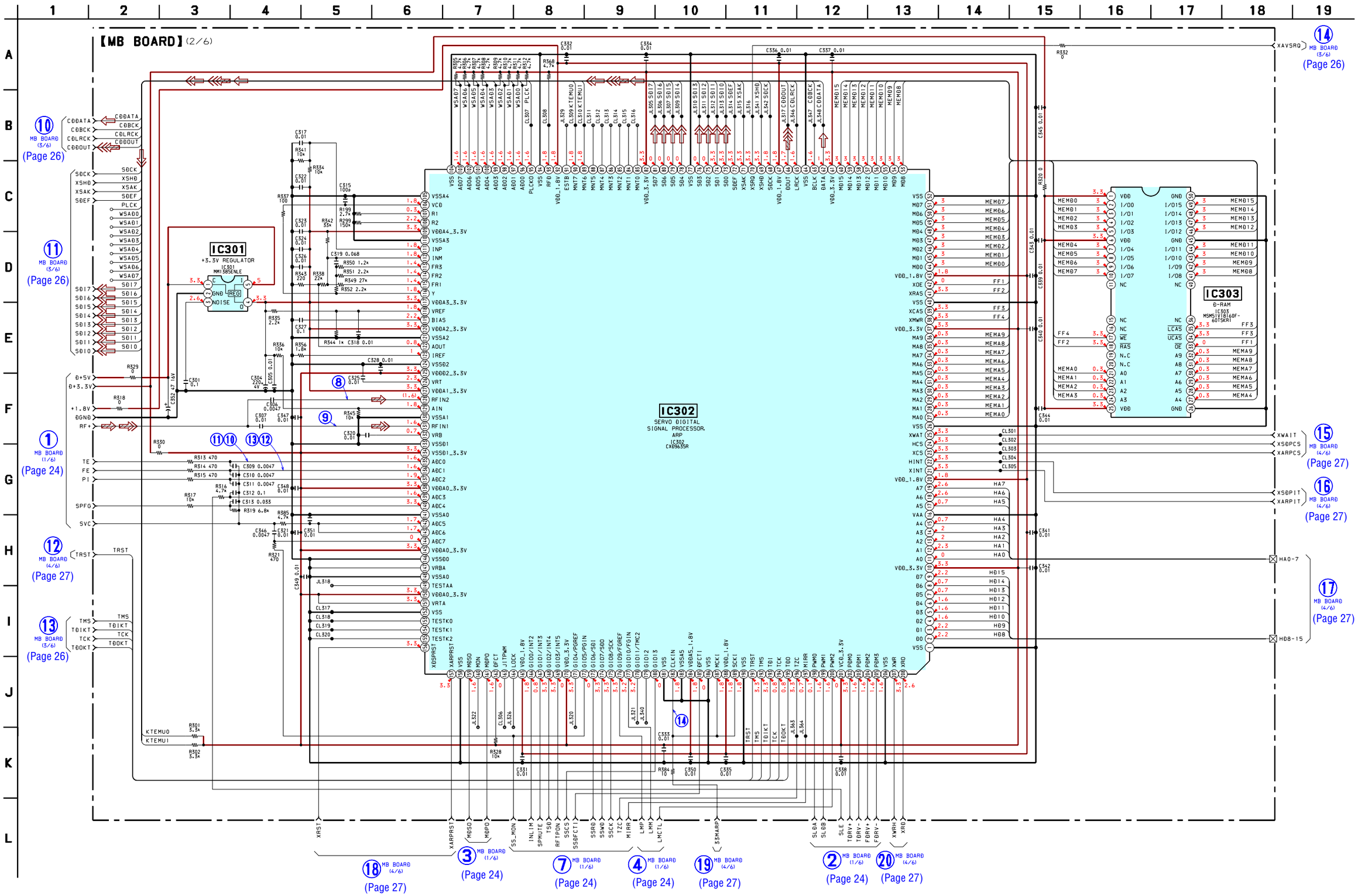
- **Semiconductor Location**

Ref. No.	Location
IC101	I-3
IC102	E-5
IC106	I-3
IC107	G-3
IC301	F-9
IC303	D-7
IC401	H-9
IC501	I-4
IC502	G-8
IC504	H-6
IC505	G-6
IC701	C-5
Q711	D-4
Q712	D-4

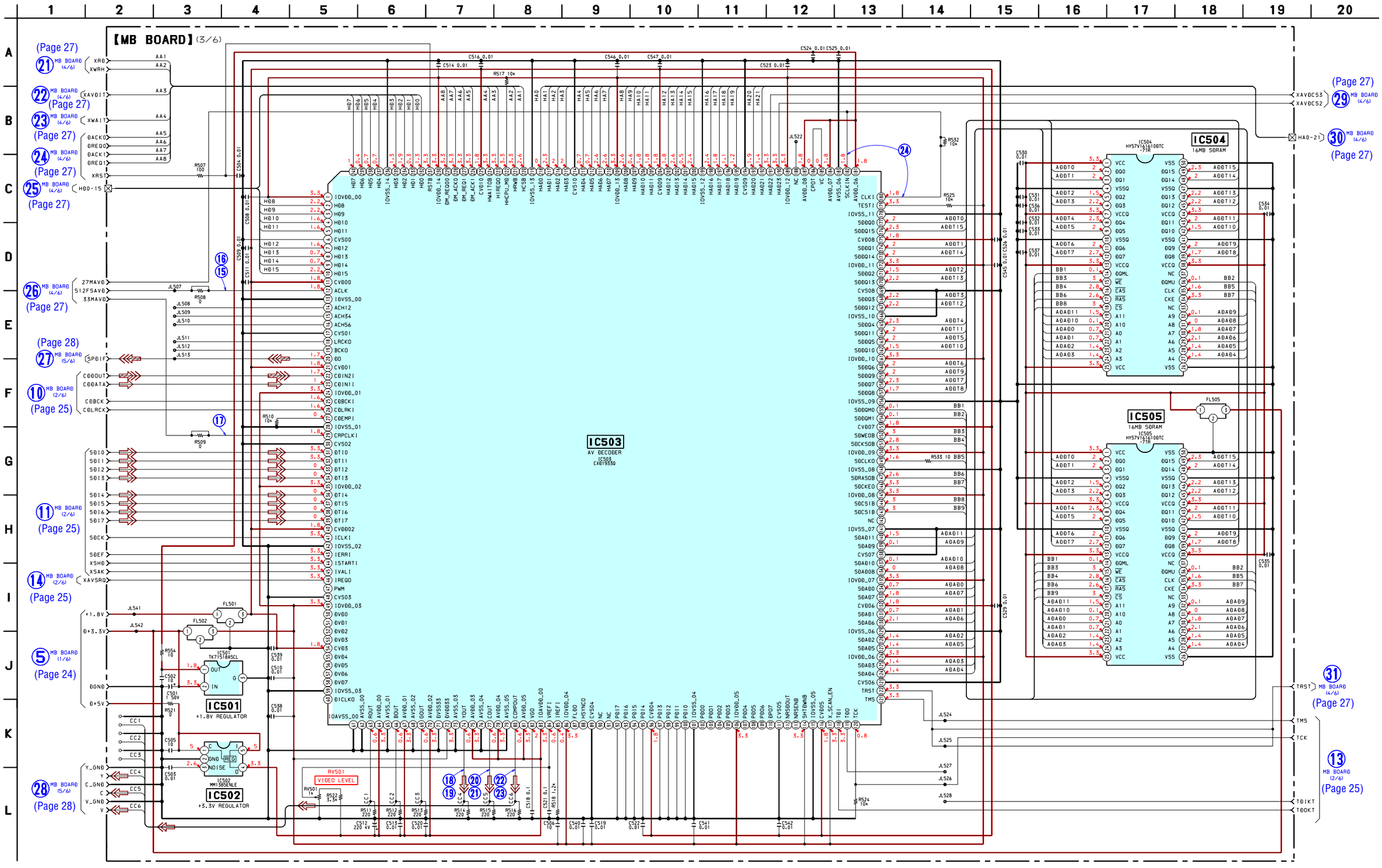
6-12. SCHEMATIC DIAGRAM – MB Board (1/6) –



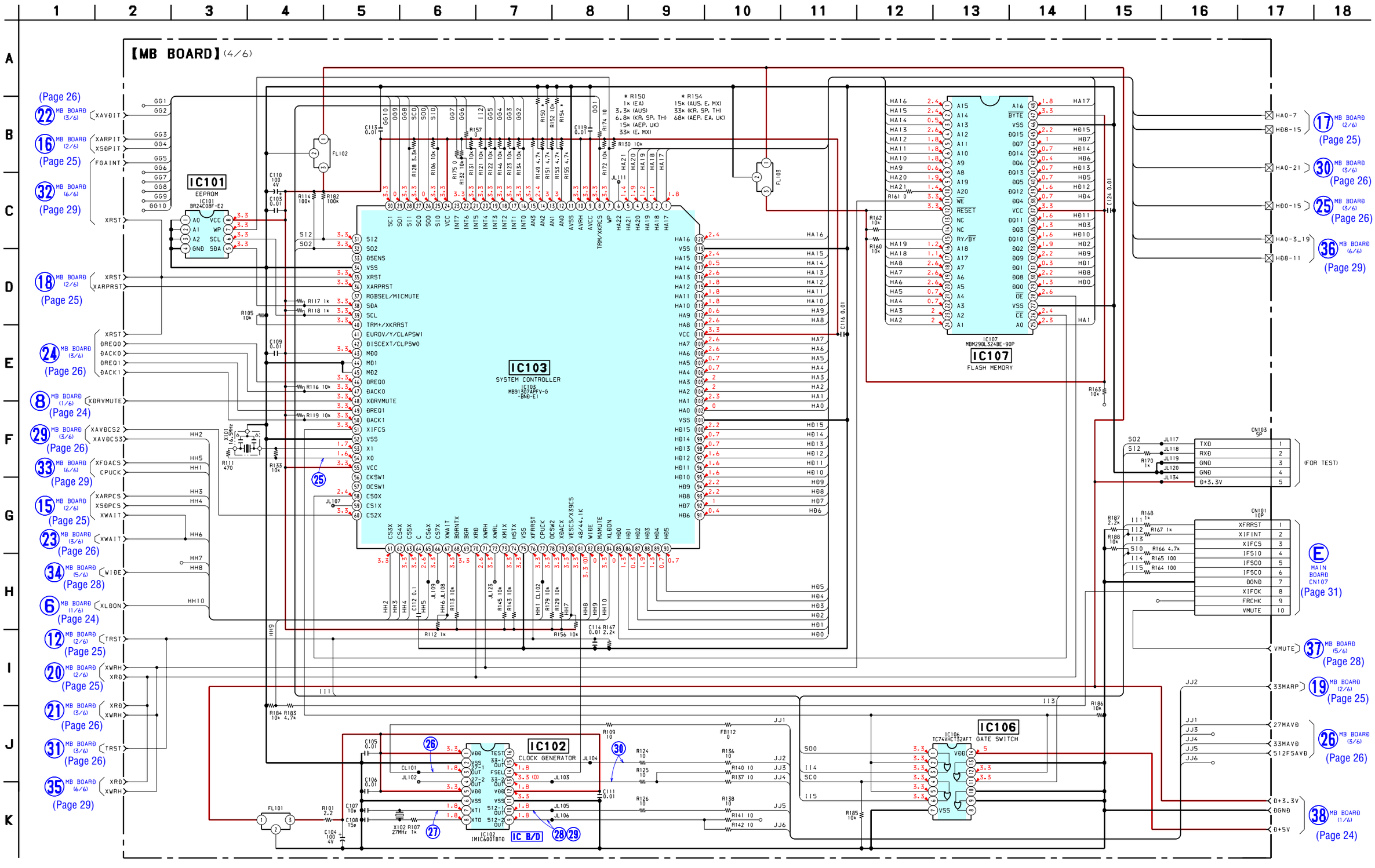
6-13. SCHEMATIC DIAGRAM – MB Board (2/6) – • See page 34 for Waveforms.



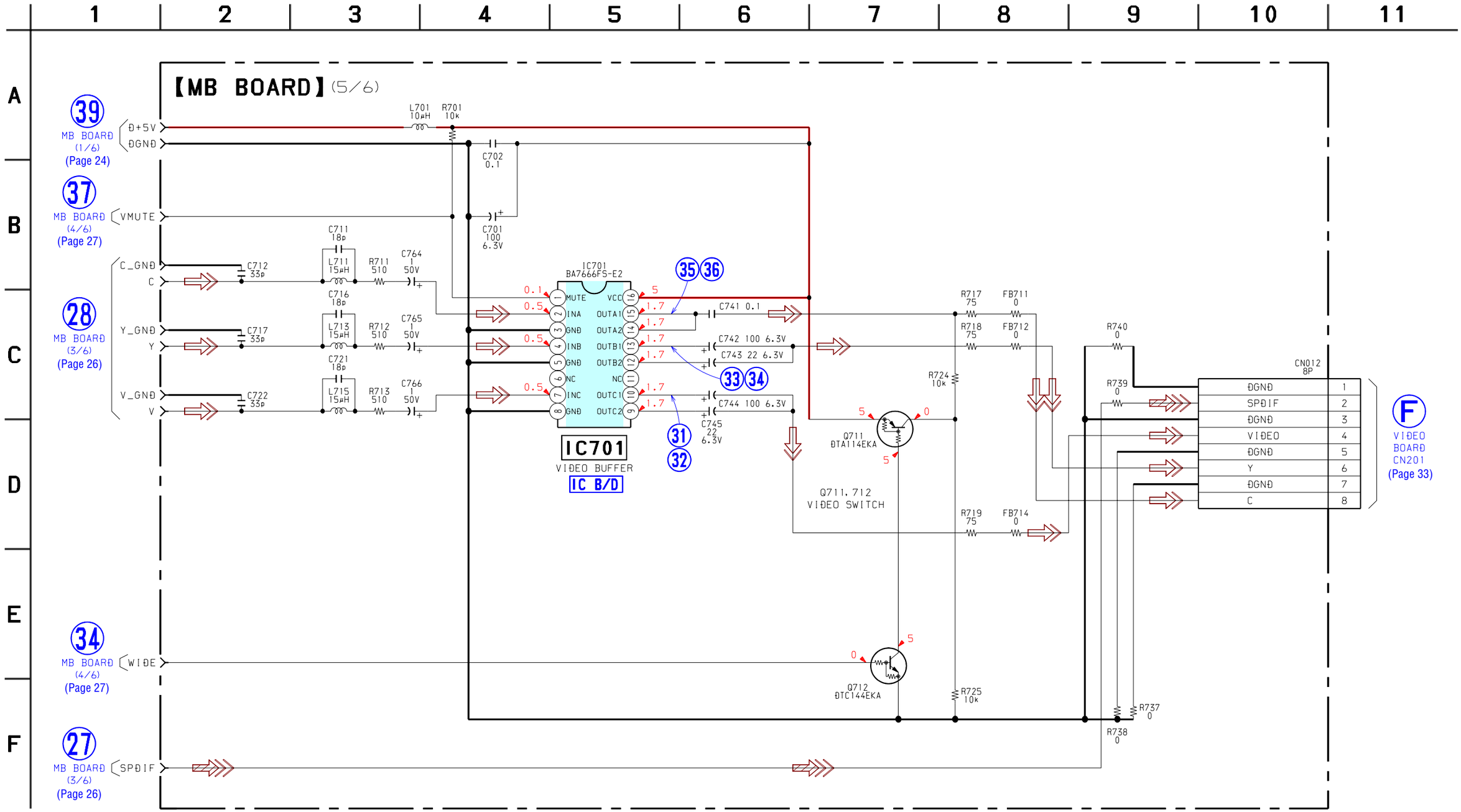
6-14. SCHEMATIC DIAGRAM – MB Board (3/6) – • See page 34 for Waveforms.



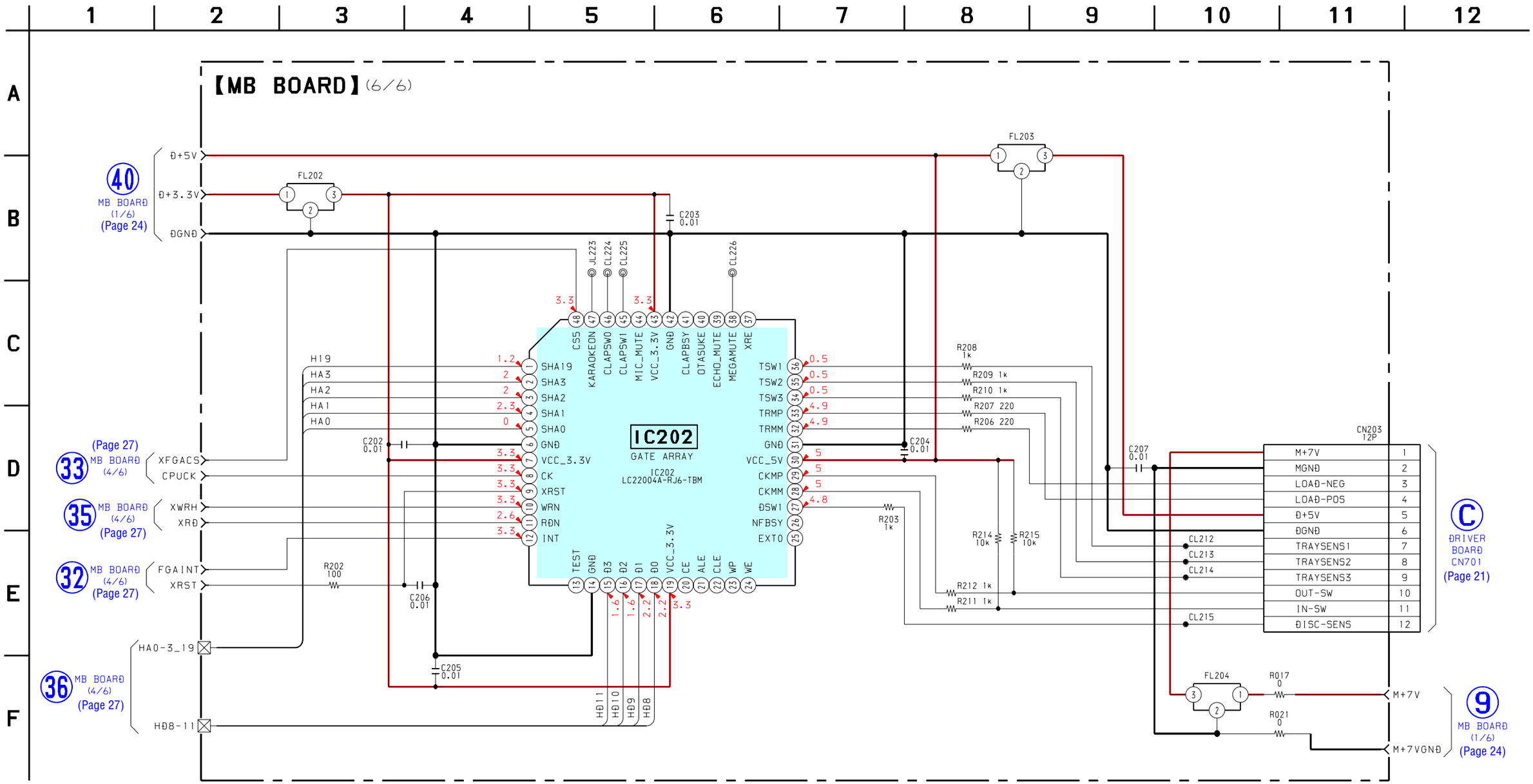
6-15. SCHEMATIC DIAGRAM – MB Board (4/6) – • See page 34 for Waveforms. • See page 36 for IC Block Diagram.



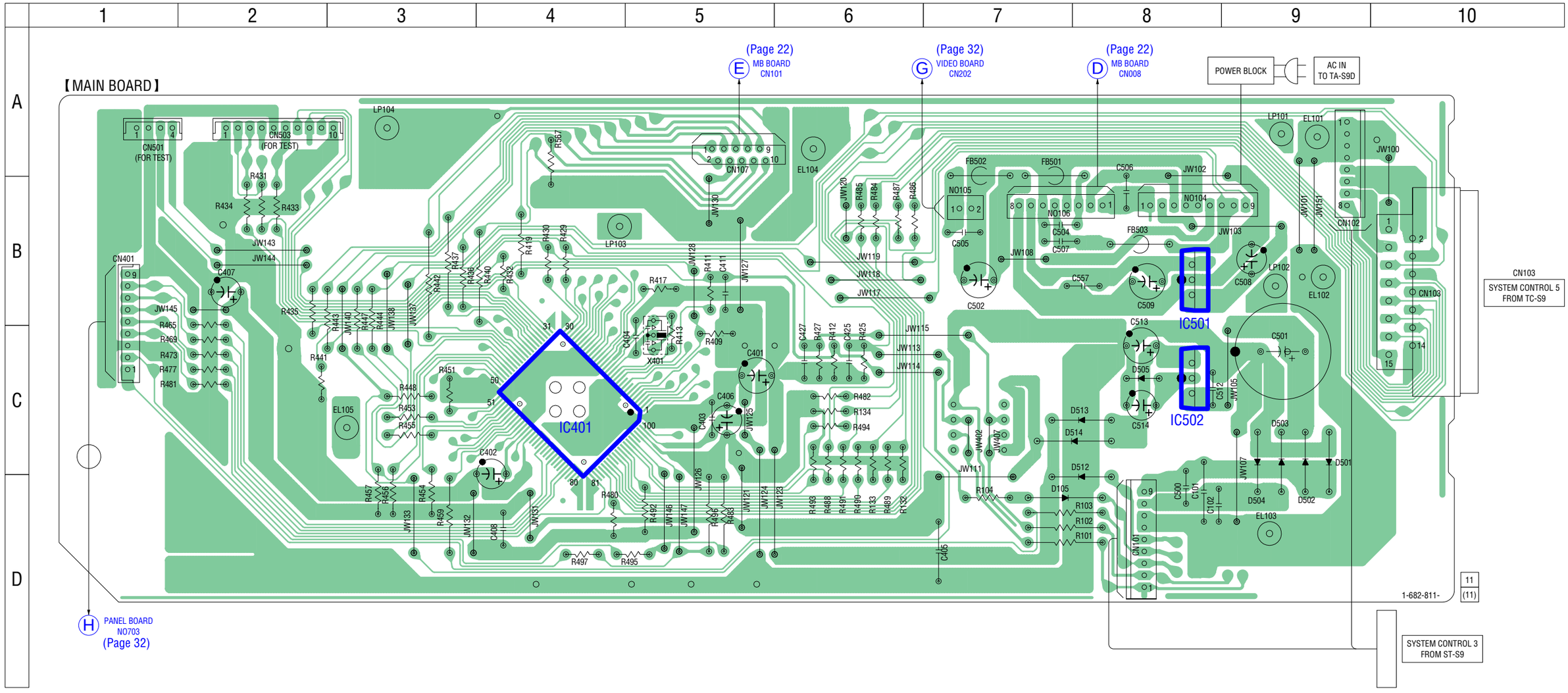
6-16. SCHEMATIC DIAGRAM – MB Board (5/6) – • See page 34 for Waveforms. • See page 36 for IC Block Diagram.



6-17. SCHEMATIC DIAGRAM – MB Board (6/6) –



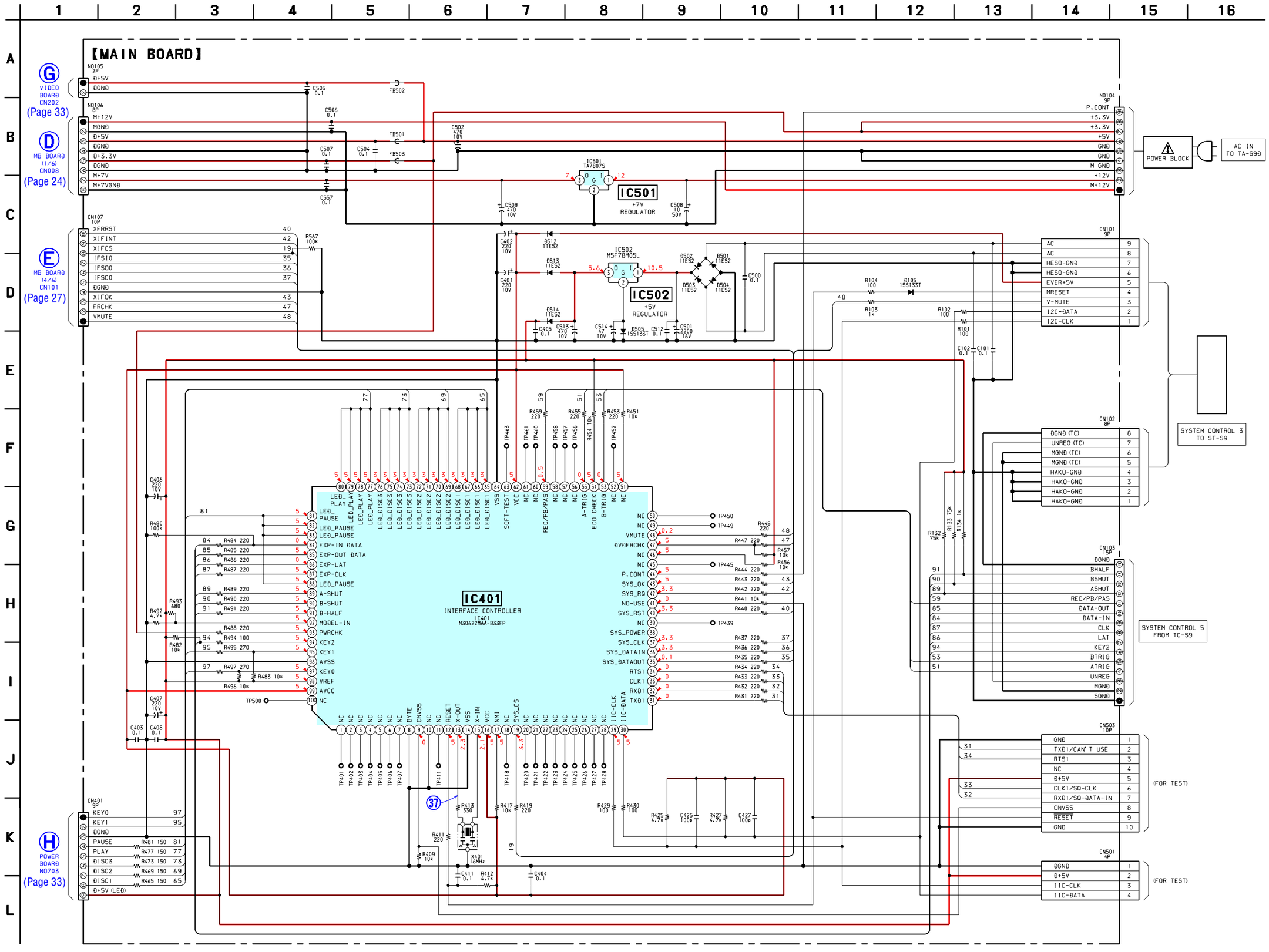
6-18. PRINTED WIRING BOARD – MAIN Board – • See page 17 for Circuit Boards Location.



- **Semiconductor Location**

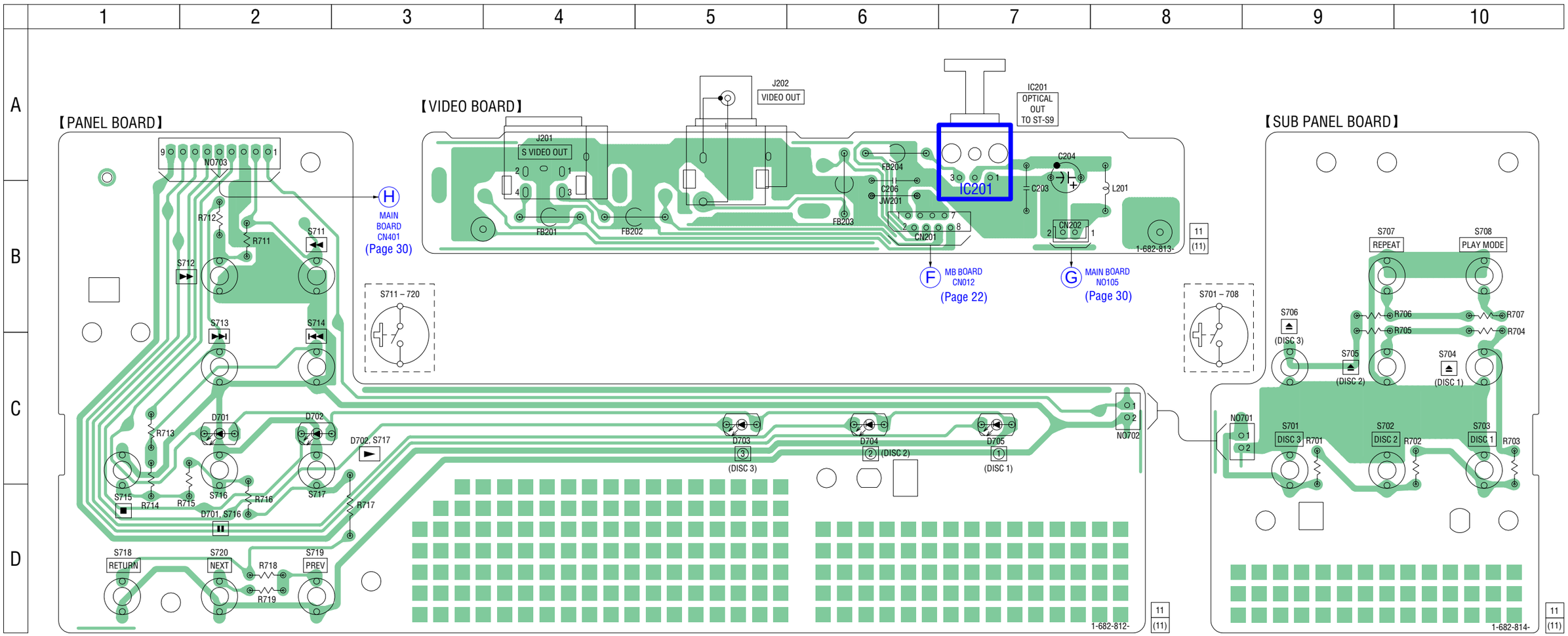
Ref. No.	Location
D105	D-7
D501	C-9
D502	C-9
D503	C-9
D504	C-9
D505	C-8
D512	D-8
D513	C-8
D514	C-8
IC401	C-4
IC501	B-8
IC502	C-8

6-19. SCHEMATIC DIAGRAM – MAIN Board – • See page 34 for Waveform.



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

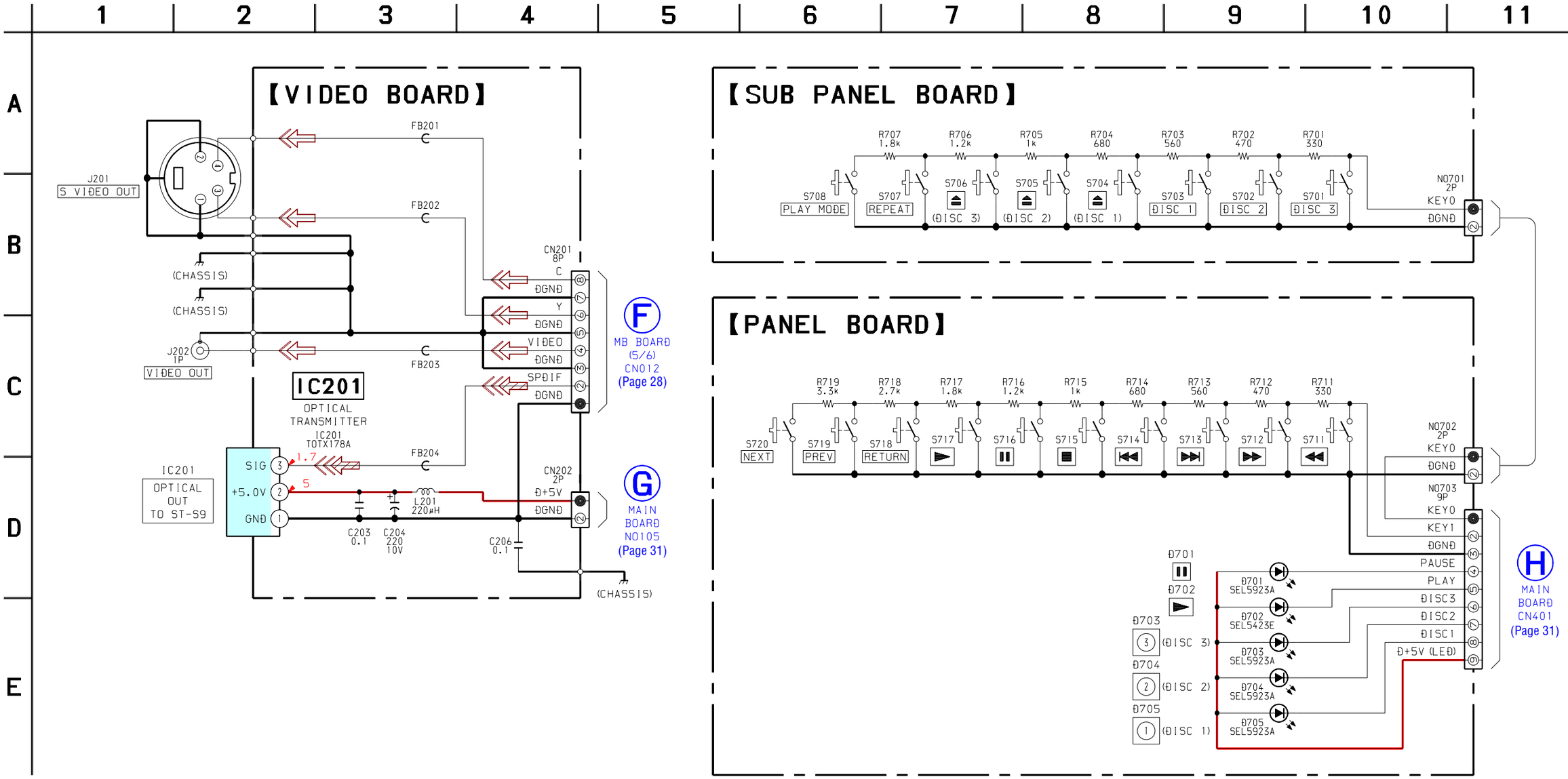
6-20. PRINTED WIRING BOARDS – PANEL/SUB PANEL/VIDEO Boards – • See page 17 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D701	C-2
D702	C-2
D703	C-5
D704	C-6
D705	C-7
IC201	A-7

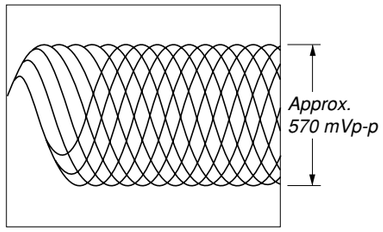
6-21. SCHEMATIC DIAGRAM – PANEL/SUB PANEL/VIDEO Boards –



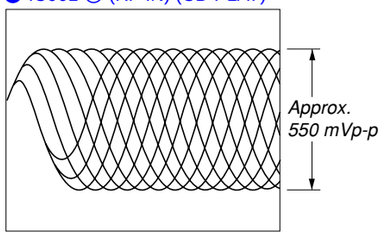
• **Waveforms**

– RF Board –

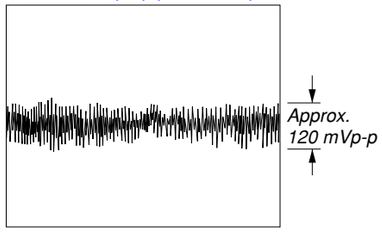
❶ IC001 ② (RF IN) (DVD PLAY)



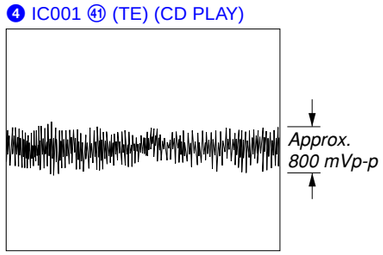
❷ IC001 ② (RF IN) (CD PLAY)



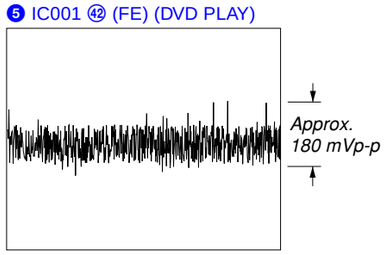
❸ IC001 ㊶ (TE) (DVD PLAY)



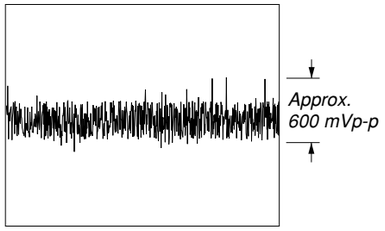
❹ IC001 ㊶ (TE) (CD PLAY)



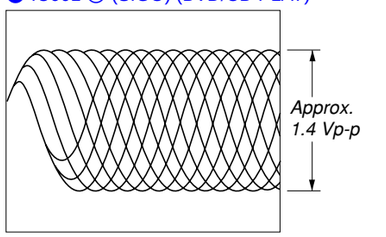
❺ IC001 ㊷ (FE) (DVD PLAY)



❻ IC001 ㊷ (FE) (CD PLAY)

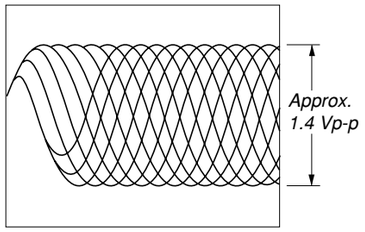


❼ IC001 ㊾ (SIGO) (DVD/CD PLAY)

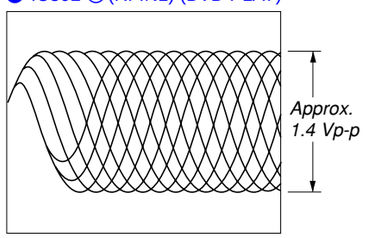


– MB Board –

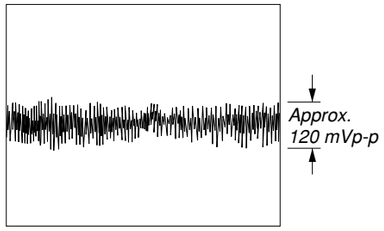
❽ IC302 ⑫⑧ (RFIN2) (CD PLAY)



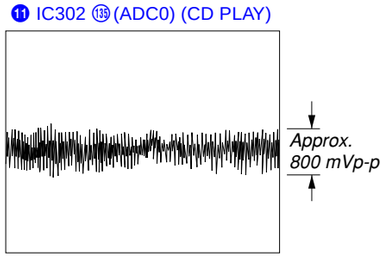
❾ IC302 ⑬① (RFIN1) (DVD PLAY)



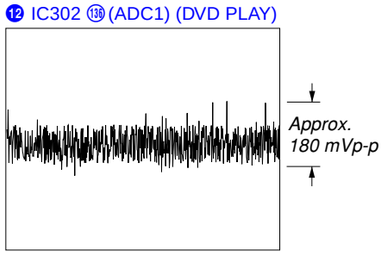
❿ IC302 ⑬⑤ (ADC0) (DVD PLAY)



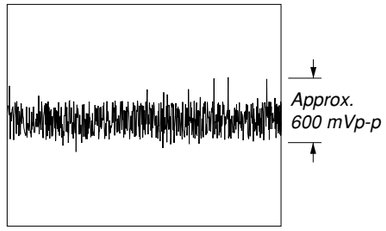
⓫ IC302 ⑬⑤ (ADC0) (CD PLAY)



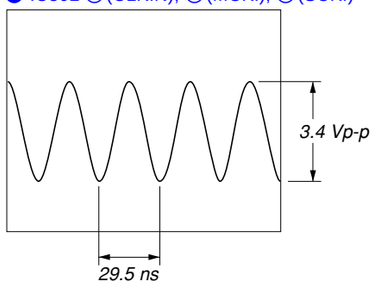
⓬ IC302 ⑬⑥ (ADC1) (DVD PLAY)



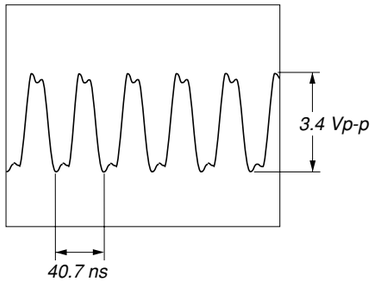
⓭ IC302 ⑬⑥ (ADC1) (CD PLAY)



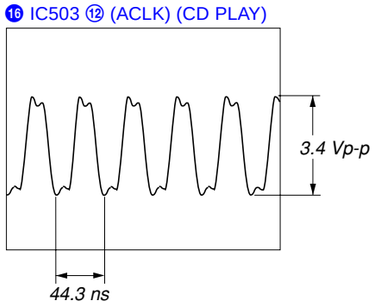
⓮ IC302 ⑫② (CLKIN), ⑫⑦ (MCKI), ⑫⑨ (SCKI)



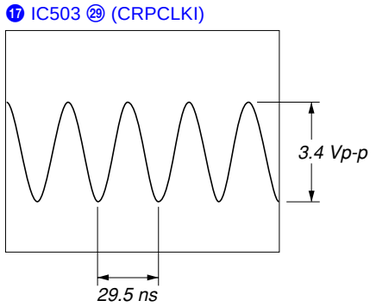
⓯ IC503 ⑫ (ACLK) (DVD PLAY)



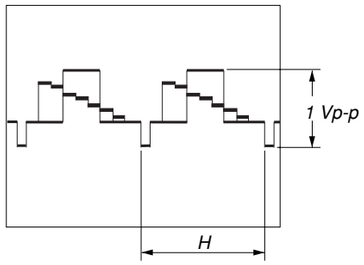
⓰ IC503 ⑫ (ACLK) (CD PLAY)



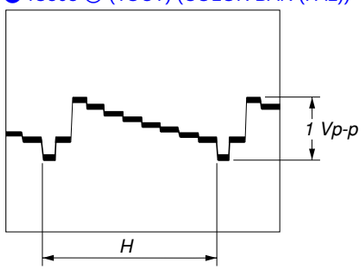
⓱ IC503 ㉙ (CRPCLKI)



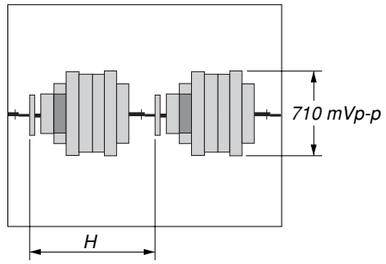
⓲ IC503 ⑦④ (YOUT) (COLOR BAR (NTSC))



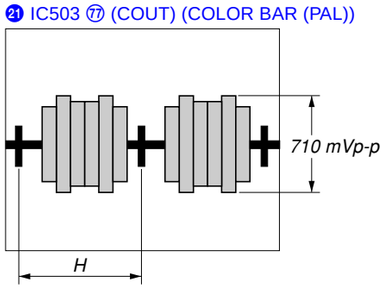
⓳ IC503 ⑦④ (YOUT) (COLOR BAR (PAL))



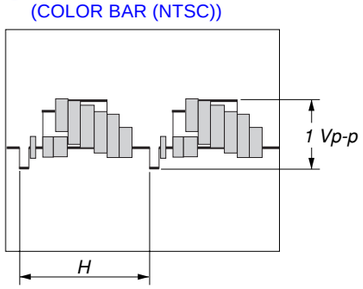
⓴ IC503 ⑦⑦ (COUT) (COLOR BAR (NTSC))



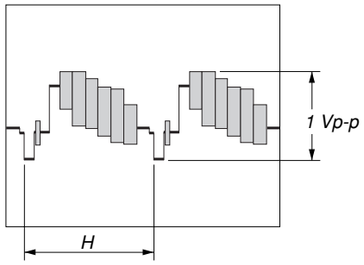
㉑ IC503 ⑦⑦ (COUT) (COLOR BAR (PAL))



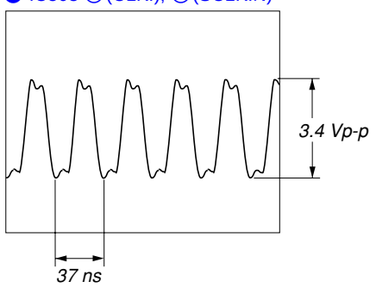
㉒ IC503 ⑧⓪ (COMPOUT) (COLOR BAR (NTSC))



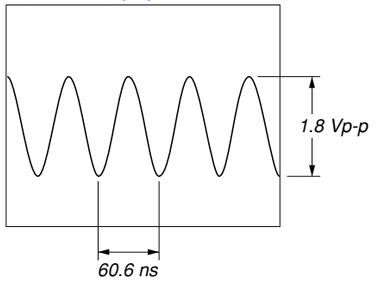
㉓ IC503 ⑧⓪ (COMPOUT) (COLOR BAR (PAL))



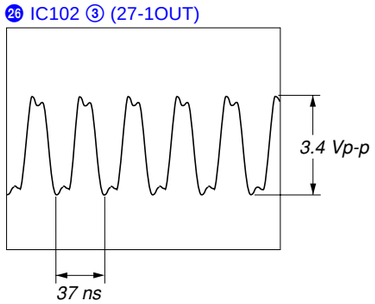
㉔ IC503 ⑱⓪ (CLKI), ⑱② (SCLKIN)



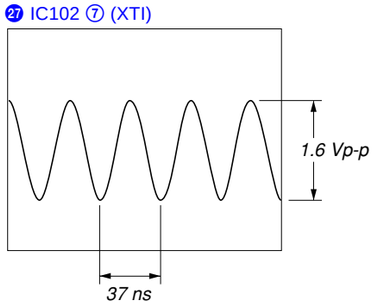
㉕ IC103 ⑤④ (X0)



㉖ IC102 ③ (27-1OUT)

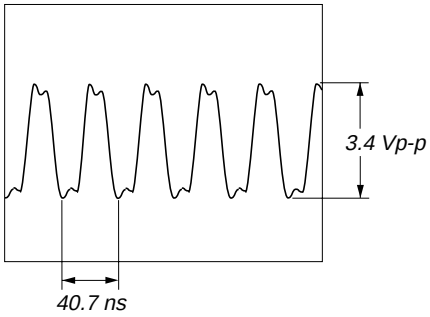


㉗ IC102 ⑦ (XTI)

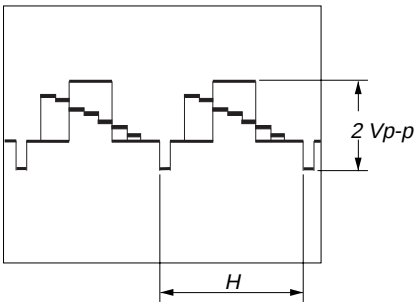


– MAIN Board –

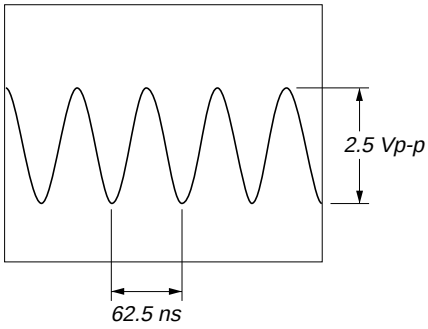
㉘ IC102 ⑨ (512-2OUT), ⑩ (512-1OUT) (DVD PLAY)



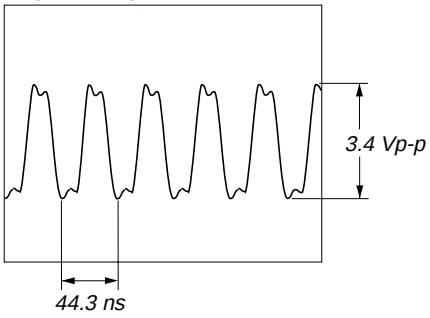
㉝ IC701 ⑬ (OUTB1) (COLOR BAR (NTSC))



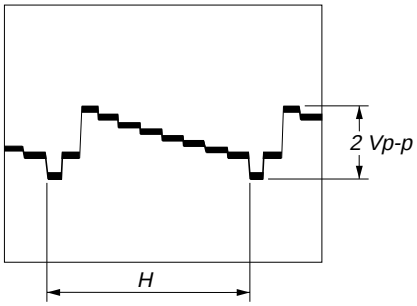
㊲ IC401 ⑬ (X-OUT)



㉙ IC102 ⑨ (512-2OUT), ⑩ (512-1OUT) (CD PLAY)



㉞ IC701 ⑬ (OUTB1) (COLOR BAR (PAL))



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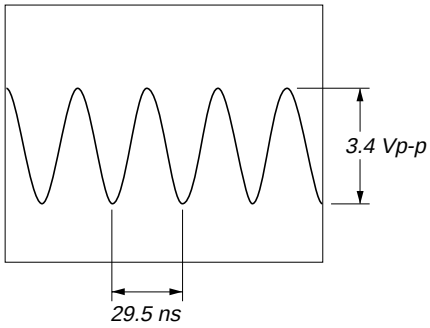
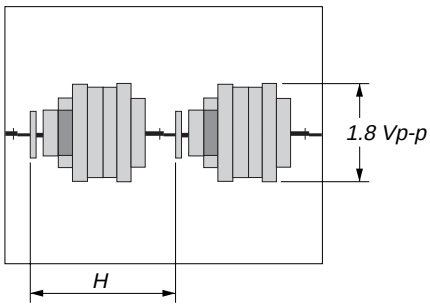
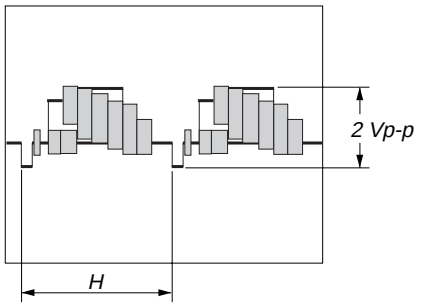


㉟ IC701 ⑮ (OUTA1) (COLOR BAR (NTSC))



㉛ IC701 ⑩ (OUTC1) (COLOR BAR (NTSC))



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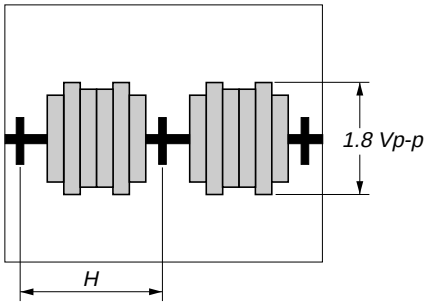
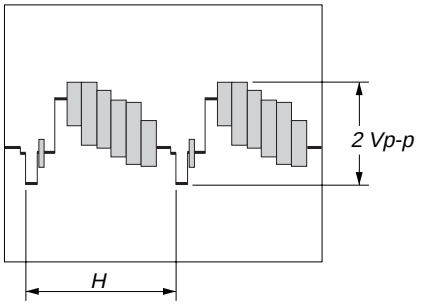
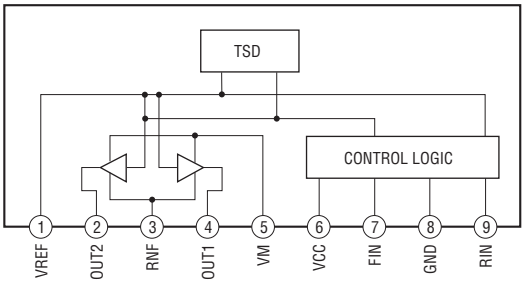


㉜ IC701 ⑩ (OUTC1) (COLOR BAR (PAL))



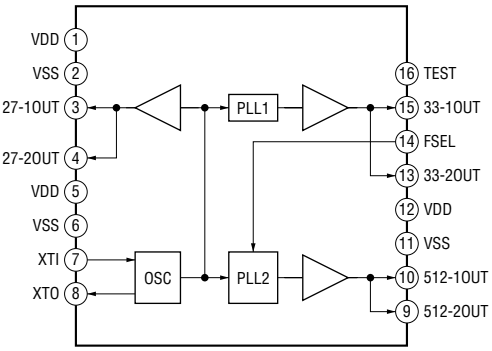
• **IC Block Diagrams**
– DRIVER Board –

IC701 BA6956AN

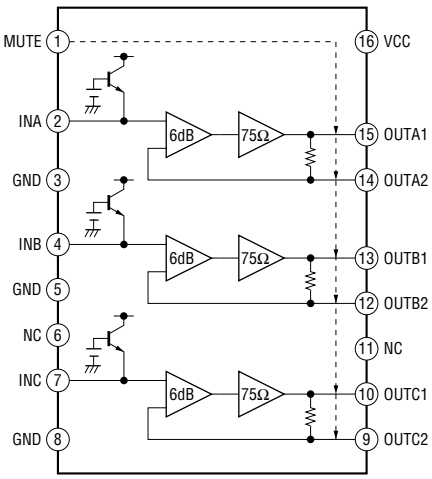


– MB Board –

IC102 IMIC6001BTD



IC701 BA7666FS-E2



6-22. IC PIN FUNCTION DESCRIPTION

• RF BOARD IC001 SP3728AC (DVD/CD RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Description
1, 2	RFIP, RFIN	I	RF signal input terminal
3	CP	—	Tracking LPF terminal
4	WIN	I	Wobble detection signal input terminal Not used (open)
5	WPP	O	Wobble push-pull signal output terminal Not used (open)
6	CN	—	Tracking LPF terminal
7 to 10	A2 to D2	I	Photo detector interface input terminal (AC coupled input for the DPD and wobble)
11 to 14	D to A	I	Photo detector interface input terminal (main)
15 to 18	E to H	I	Photo detector interface input terminal (sub)
19	VC	O	Reference voltage (+2.5V) output terminal
20	VPB	—	Power supply terminal (+5V) (servo block)
21	DVDPD	I	DVD APC signal input terminal
22	CDPD	I	CD APC signal input terminal
23	VNB	—	Ground terminal (servo block)
24	LDSELO	O	APC LD select signal output terminal
25	DVDLD	O	DVD APC signal output terminal
26	CDLD	O	CD APC signal output terminal
27	$\overline{\text{LDON}}$	I	APC LD output control signal input terminal
28	MEVO	O	Envelope signal output terminal for mirror
29	MIN	I	RF signal input terminal for mirror
30	MP	—	Mirror top hold terminal
31	MB	—	Mirror bottom hold terminal
32	MLPF	—	Mirror LPF terminal
33	MIRR	O	Mirror detect signal output to the servo DSP (IC302)
34	BYP2	—	Servo AGC gain control terminal
35	PII	I	Pull-in signal input terminal
36	PI	O	Pull-in signal output terminal
37	TZC	O	Tracking zero crossing signal output to the servo DSP (IC302)
38	DFT	O	Defect signal output to the servo DSP (IC302)
39	VCI	I	Reference voltage input terminal
40	TZIN	I	Tracking zero crossing signal input terminal
41	TE	O	Tracking error signal output to the servo DSP (IC302)
42	FE	O	Focusing error signal output to the servo DSP (IC302)
43	TPH	—	PI top hold terminal
44	MON	O	Monitor signal output to the servo DSP (IC302)
45	SRD	O	Serial data output to the servo DSP (IC302)
46	SWD	I	serial data input from the servo DSP (IC302)
47	SCLK	I	Serial clock signal input from the servo DSP (IC302)
48	SDEN	I	Serial data enable signal input from the servo DSP (IC302)
49	V33	—	Power supply terminal (+3.3V) (CMOS output buffers)
50	RX	I	Reference resistor input terminal
51	TPA	—	RF top hold terminal
52	MEV	—	RF bottom envelope terminal
53	VNA	—	Ground terminal (RF block and serial port)
54, 55	FNN, FNP	O	Differential filter normal signal output terminal
56, 57	DIP, DIN	I	Analog signal input terminal for RF single buffer

Pin No.	Pin Name	I/O	Description
58	BYP	—	RF AGC gain control terminal
59	SIGO	O	Single-ended RF signal output terminal
60	VPA	—	Power supply terminal (+5V) (RF block and serial port)
61, 62	AIP, AIN	I	AGC amp signal input terminal
63, 64	ATON, ATOP	O	Differential attenuator signal output terminal

• **MB BOARD IC103 MB91307APFV-G-BND-E1 (SYSTEM CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1 to 5	HA17 to HA21	O	Address signal output terminal
6	HA22	—	Not used (open)
7	WP	O	Write control signal output to the EEPROM (IC101)
8	TRM/XKRCS	—	Not used (open)
9	AVCC	—	Power supply terminal (+3.3V) (for A/D converter)
10	AVRH	—	Reference voltage input (+3.3V) terminal (for A/D converter)
11	AVSS	—	Ground terminal (for A/D converter)
12	AN0	I	Mode 0 set input terminal
13	AN1	I	Mode 1 set input terminal
14	AN2	I	Mode 2 set input terminal
15	AN3	I	Mode 3 set input terminal
16	INT0	I	Interrupt request signal input from the AV decoder (IC503)
17	INT1	I	Interrupt request signal input from the ARP (IC302)
18	INT2	I	Interrupt request signal input from the servo DSP (IC302)
19	INT3	I	Interrupt request signal input from the gate array (IC202)
20	INT4	I	Interrupt request signal input from the interface controller (IC401)
21, 22	INT5, INT6	—	Not used (fixed at “H”)
23	INT7	—	Not used (open)
24	VCC	—	Power supply terminal (+3.3V)
25	SI0	I	Serial data input from the interface controller (IC401)
26	SO0	O	Serial data output to the interface controller (IC401)
27	SC0	O	Serial clock signal output to the interface controller (IC401)
28	SI1	I	Serial data input terminal Not used (open)
29	SO1	O	Serial data output terminal Not used (open)
30	SC1	O	Serial clock signal output terminal Not used (open)
31	SI2	I	Serial data input terminal (for test)
32	SO2	O	Serial data output terminal (for test)
33	DSENS	—	Not used (open)
34	VSS	—	Ground terminal
35	XRST	O	System reset signal output terminal “L”: reset
36	XARPPST	O	Reset signal output to the ARP (IC302) “L”: reset
37	RGBSEL/MICMUTE	—	Not used (open)
38	SDA	I/O	Two-way data bus with EEPROM (IC101)
39	SCL	O	Serial clock signal output to the EEPROM (IC101)
40	TRM+/XKRRST	—	Not used (fixed at “L”)
41	EUROV/Y/CLAPSW1	—	Not used (open)
42	DISCEXT/CLPSW0	—	Not used (open)
43	MD0	I	Mode select 0 signal input terminal (fixed at “H” in this set)
44	MD1	I	Mode select 1 signal input terminal (fixed at “L” in this set)
45	MD2	I	Mode select 2 signal input terminal (fixed at “L” in this set)
46	DREQ0	I	Request 0 signal input from the AV decoder (IC503)
47	DACK0	O	Acknowledge 0 signal output to the AV decoder (IC503)
48	XDRVMUTE	O	Drive mute signal output terminal
49	DREQ1	I	Request 1 signal input from the AV decoder (IC503)
50	DACK1	O	Acknowledge 1 signal output to the AV decoder (IC503)

Pin No.	Pin Name	I/O	Description
51	XIFCS	O	Chip select signal output to the interface controller (IC401)
52	VSS	—	Ground terminal
53	X1	O	System clock output terminal (16.5MHz)
54	X0	I	System clock input terminal (16.5MHz)
55	VCC	—	Power supply terminal (+3.3V)
56	CKSW1	—	Not used (open)
57	OCSSW1	—	Not used (open)
58	CS0X	O	Chip select signal output to the flash memory (IC107)
59	CS1X	—	Not used (open)
60	CS2X	O	Chip select signal output to the AV decoder (IC503)
61	CS3X	O	Chip select signal output to the AV decoder (IC503)
62	CS4X	O	Chip select signal output to the ARP (IC302)
63	CS5X	O	Chip select signal output to the Servo DSP (IC302)
64	C	—	Capacitor connected terminal
65	CS6X	O	Chip select signal output to the gate array (IC202)
66	CS7X	—	Not used (open)
67	XWAIT	I	Wait signal input terminal
68	BGRNTX	—	Not used (fixed at “H”)
69	BGR	—	Not used (open)
70	XRD	O	Read enable signal output terminal
71	XWRH	O	High byte write enable signal output terminal
72	XWRL	—	Not used (open)
73	NMIX	—	Not used (fixed at “H”)
74	HSTX	—	Not used (fixed at “H”)
75	VSS	—	Ground terminal
76	XFRRST	I	Reset signal input from the interface controller (IC401) “L”: reset
77	CPUCK	O	CPU clock signal output terminal
78	OCSW2	—	Not used (fixed at “H”)
79	XDACX	—	Not used (fixed at “H”)
80	VESCS/X39CS	—	Not used (fixed at “H”)
81	48/44.1K	O	Sampling frequency selection signal output terminal “L”: 48kHz, “H”: 44.1kHz
82	WIDE	O	Wide signal output terminal
83	MAMUTE	I	System OK signal input terminal
84	XLDON	O	LD control signal output terminal
85 to 100	HD0 to HD15	I/O	Two-way data bus terminal
101	VSS	—	Ground terminal
102 to 109	HA0 to HA7	O	Address signal output terminal
110	VCC	—	Power supply terminal (+3.3V)
111 to 118	HA8 to HA15	O	Address signal output terminal
119	VSS	—	Ground terminal
120	HA16	O	Address signal output terminal

• **MB BOARD IC302 CXD9635R (SERVO DIGITAL SIGNAL PROCESSOR, ARP)**

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal (for digital system)
2 to 9	D0 to D7	I/O	Two-way data bus terminal
10	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
11 to 15	A0 to A4	I	Address signal input terminal
16	VSS	—	Ground terminal (for digital system)
17 to 19	A5 to A7	I	Address signal input terminal
20	VDD 1.8V	—	Power supply terminal (+1.8V) (for digital system)
21	XINT	O	Interrupt request signal output to the system controller (IC103)
22	HINT	O	Interrupt request signal output to the system controller (IC103)
23	XCS	I	Chip select signal input from the system controller (IC103)
24	HCS	I	Chip select signal input from the system controller (IC103)
25	XWAT	O	Wait signal output terminal
26	VSS	—	Ground terminal (for digital system)
27 to 36	MA0 to MA9	O	Address signal output to the D-RAM (IC303)
37	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
38	XMWR	O	Write enable signal output to the D-RAM (IC303)
39	XCAS	O	CAS signal output to the D-RAM (IC303)
40	VSS	—	Ground terminal (for digital system)
41	XRAS	O	RAS signal output to the D-RAM (IC303)
42	XOE	O	Output enable signal output to the D-RAM (IC303)
43	VDD1 1.8V	—	Power supply terminal (+1.8V) (for digital system)
44 to 51	MD0 to MD7	I/O	Two-way data bus with the D-RAM (IC303)
52	VSS	—	Ground terminal (for digital system)
53 to 60	MD8 to MD15	I/O	Two-way data bus with the D-RAM (IC303)
61	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
62	DATA	O	CD data output to the AV decoder (IC503)
63	BCLK	O	CD bit clock signal output to the AV decoder (IC503)
64	VSS	—	Ground terminal (for digital system)
65	LRCK	O	CD LR clock signal output to the AV decoder (IC503)
66	DOUT	O	Digital signal output to the AV decoder (IC503)
67	VDD 1.8V	—	Power supply terminal (+1.8V) (for digital system)
68	SDCK	O	SD bus clock signal output to the AV decoder (IC503)
69	XSHD	O	SD bus header signal output to the AV decoder (IC503)
70	XSRQ	I	SD bus request signal input from the AV decoder (IC503)
71	XSAK	O	SD bus acknowledge signal output to the AV decoder (IC503)
72	SDEF	O	SD bus error flag signal output to the AV decoder (IC503)
73 to 81	SD0 to SD7	O	SD bus data output to the AV decoder (IC503)
82	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
83 to 88	MNT0 to MNT5	I/O	Monitor signal input/output terminal Not used (open)
89, 90	MNT6, MNT7	I/O	Monitor signal input/output terminal Not used (fixed at “H”)
91	ESTB	O	Error strobe signal output terminal Not used (open)
92	VDD 1.8V	—	Power supply terminal (+1.8V) (for digital system)
93	RFD	I/O	RF digital data input/output terminal Not used (fixed at “H”)
94	VSS	—	Ground terminal (for digital system)

Pin No.	Pin Name	I/O	Description
95	PLCKO	O	Not used (open)
96 to 103	ADO0 to ADO7	O	Not used (fixed at “H”)
104	VSS	—	Ground terminal (for digital system)
105	VSSA4	—	Ground terminal (for analog system)
106	VCO	I	VCO control signal input terminal
107, 108	R1, R2	I	VCO outside resistance signal input terminal
109	VDDA4 3.3V	—	Power supply terminal (+3.3V) (for analog system)
110	VSSA3	—	Ground terminal (for analog system)
111	INP	I	OP amp positive input terminal
112	INM	I	OP amp negative input terminal
113 to 115	FR3 to FR1	I	Feedback resistance signal input terminal
116	Y	O	OP amp output terminal
117	VDDA3 3.3V	—	Power supply terminal (+3.3V) (for analog system)
118	VREF	I	Reference voltage input terminal (for D/A converter)
119	BIAS	I	Bias input terminal (for D/A converter)
120	VDDA2 3.3V	—	Power supply terminal (+3.3V) (for analog system)
121	VSSA2	—	Ground terminal (for analog system)
122	AOUT	O	D/A converter output terminal (for D/A converter)
123	IREF	I	Reference current input terminal (for D/A converter)
124	VSSD2	—	Ground terminal (for D/A converter)
125	VDDD2 3.3V	—	Power supply terminal (+3.3V) (for D/A converter)
126	VRT	I	A/D converter reference input terminal
127	VDDA1 3.3V	—	Power supply terminal (+3.3V) (for analog system)
128	RFIN2	I	RF signal input terminal
129	NMIX	—	RF signal input terminal Not used
130	VSSA1	—	Ground terminal (for analog system)
131	RFIN1	I	RF signal input terminal
132	VRB	I	A/D converter reference input terminal
133	VSSD1	—	Ground terminal (for A/D converter)
134	VDDD1 3.3V	—	Power supply terminal (+3.3V) (for A/D converter)
135	ADC0	I	Tracking error signal input from the SP3728AC (IC001)
136	ADC1	I	Focusing error signal input from the SP3728AC (IC001)
137	ADC2	I	Pull-in signal input from the SP3728AC (IC001)
138	VDDA0 3.3V	—	Power supply terminal (+3.3V) (for analog system)
139	ADC3	I	Tracking coil drive signal input from the FAN8034 (IC401)
140	ADC4	I	Spindle motor drive signal input from the FAN8034 (IC401)
141	VSSA0	—	Ground terminal (for analog system)
142, 143	ADC5, ADC6	I	A/D converter input terminal
144	ADC7	I	Monitor signal input from the SP3728AC (IC001)
145	VDDD0 3.3V	—	Power supply terminal (+3.3V) (for A/D converter)
146	VSSD0	—	Ground terminal (for A/D converter)
147	VRBA	I	A/D converter reference input terminal
148	VSSA0	—	Ground terminal (for analog system)
149	TESTAA	O	ASW output terminal Not used (open)
150	VDDA0 3.3V	—	Power supply terminal (+3.3V) (for analog system)

Pin No.	Pin Name	I/O	Description
151	VRTA	I	A/D converter reference input terminal
152	VSS	—	Ground terminal (for digital system)
153 to 155	TESTK0 to TESTK2	I	Test signal input terminal (fixed at “L”)
156	XDSPRST	I	DSP reset signal input from the system controller (IC103) “L”: reset
157	XARPRST	I	ARP reset signal input from the system controller (IC103) “L”: reset
158	VSS	—	Ground terminal (for digital system)
159	MDS0	O	Spindle motor drive signal output to the FAN8034 (IC401)
160	MON	O	Motor ON/OFF signal output terminal Not used (open)
161	MDP0	O	Spindle motor drive signal output to the FAN8034 (IC401)
162	DFCT	O	Defect detection signal output terminal
163	JITPWM	O	Jitter PWM signal output terminal Not used (open)
164	LOCK	O	EFM lock detection signal output terminal Not used (open)
165	VDD1 1.8V	—	Power supply terminal (+1.8V) (for digital system)
166	GIO0/INT2	I	Inlimit sensor input terminal
167	GIO1/INT3	O	Spindle motor drive control signal output to the FAN8034 (IC401)
168	GIO2/INT4	I	TSD-M signal input from the FAN8034 (IC401)
169	GIO3/INT5	—	Not used (open)
170	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
171	GIO4/PGREF	—	Not used (open)
172	GIO5/PGIN	I	Monitor signal input from the SP3728AC (IC001)
173	GIO6/SDI	I	Serial data input from the SP3728AC (IC001)
174	GIO7/SDO	O	Serial data output to the SP3728AC (IC001)
175	GIO8/SCK	O	Serial clock signal output to the SP3728AC (IC001)
176	GIO9/FGREF	O	Motor drive signal output terminal Not used
177	GIO10/FGIN	O	Motor drive signal output terminal Not used
178	GIO11/TMC2	—	Not used (open)
179	GIO12	—	Not used (open)
180	GIO13	O	Serial data enable signal output to the SP3728AC (IC001)
181	VSS	—	Ground terminal (for digital system)
182	CLKIN	I	Clock signal input terminal
183	VSSA5	—	Ground terminal (for analog system)
184	VDDA5 1.8V	—	Power supply terminal (+1.8V) (for analog system)
185	DFCTI	I	Defect signal input from the SP3728AC (IC001)
186	VSS	—	Ground terminal (for digital system)
187	MCKI	I	Clock signal input terminal
188	VDD 1.8V	—	Power supply terminal (+1.8V) (for digital system)
189	SCKI	I	Clock signal input terminal
190	VSS	—	Ground terminal (for digital system)
191	TRST	I	Reset signal input terminal (for JTAG boundary scan)
192	TMS	I	MS signal input terminal (for JTAG boundary scan)
193	TDI	I	Serial data input terminal (for JTAG boundary scan)
194	TCK	I	Clock signal input terminal (for JTAG boundary scan)
195	TDO	O	Serial data output terminal (for JTAG boundary scan)
196	TZC	I	Tracking zero crossing signal input from the SP3728AC (IC001)
197	MIRR	I	Mirror detect signal input terminal from the SP3728AC (IC001)

Pin No.	Pin Name	I/O	Description
198, 199	PWM0, PWM1	O	Sled motor drive signal output to the FAN8034 (IC401)
200	PWM2	O	Motor drive signal output terminal Not used
201	VDD 3.3V	—	Power supply terminal (+3.3V) (for digital system)
202, 203	PDM0, PDM1	O	Tracking coil drive signal output to the FAN8034 (IC401)
204, 205	PDM2, PDM3	O	Focusing coil drive signal output to the FAN8034 (IC401)
206	VSS	—	Ground terminal (for digital system)
207	XWR	I	Write enable signal input terminal
208	XRD	I	Read enable signal input terminal

• **MAIN BOARD IC401 M30622MAA-B33FP (INTERFACE CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1 to 7	NC	—	Not used (open)
8	BYTE	I	External data bus line byte selection signal input "L": 16 bits, "H": 8 bits Not used (fixed at "L")
9	CNVSS	—	Processor mode switch terminal (for test)
10	NC	—	Not used (fixed at "L")
11	NC	—	Not used (open)
12	RESET	I	System reset signal input terminal
13	X-OUT	O	System clock output terminal (16 MHz)
14	VSS	—	Ground terminal
15	X-IN	I	System clock input terminal (16 MHz)
16	VCC	—	Power supply terminal (+5V)
17	NMI	I	Non-maskable interrupt input terminal Not used (fixed at "H")
18	NC	—	Not used (open)
19	SYS CS	I	Chip select signal input from the system controller (IC103)
20 to 28	NC	—	Not used (open)
29	IIC-CLK	I/O	Communication data reading clock signal input or transfer clock signal output terminal
30	IIC-DATA	I/O	Communication data bus terminal
31	TXD1	I	Serial data input terminal (for test)
32	RXD1	O	serial data output terminal (for test)
33	CLK1	O	Serial clock signal output terminal (for test)
34	RTS1	O	RTS signal output terminal (for test)
35	SYS DATAOUT	O	serial data output to the system controller (IC103)
36	SYS DATAIN	I	serial data input from the system controller (IC103)
37	SYS CLK	O	Serial clock signal output to the system controller (IC103)
38	SYS POWER	O	Power ON/OFF control signal output terminal "H": ON Not used (open)
39	NC	—	Not used (open)
40	SYS RST	O	System reset signal output terminal "L": reset
41	NO-USE	—	Not used (fixed at "L")
42	SYS RQ	O	Interrupt request signal output to the system controller (IC103)
43	SYS OK	O	System OK signal output to the system controller (IC103)
44	P.CONT	O	Power block ON/OFF control signal output terminal "H": ON
45	NC	—	Not used (open)
46	NC	—	Not used (fixed at "H")
47	DVDFRCHK	O	Flash memory (for DVD) check signal output terminal Not used (fixed at "H")
48	VMUTE	O	Mute signal output to the video buffer (IC701) "H": mute
49, 50	NC	—	Not used (open)
51	NC	—	Not used (fixed at "H")
52	NC	—	Not used (open)
53	B-TRIG	O	Deck-B trigger plunger drive signal output terminal "H": trigger plunger on
54	ECO CHECK	—	Not used (fixed at "H")
55	A-TRIG	O	Deck-A trigger plunger drive signal output terminal "H": trigger plunger on
56 to 58	NC	—	Not used (open)
59	REC/PB/PASS	O	Recording/playback/pass selection signal output terminal "L": recording, center voltage: playback, "H": pass
60, 61	NC	—	Not used (open)

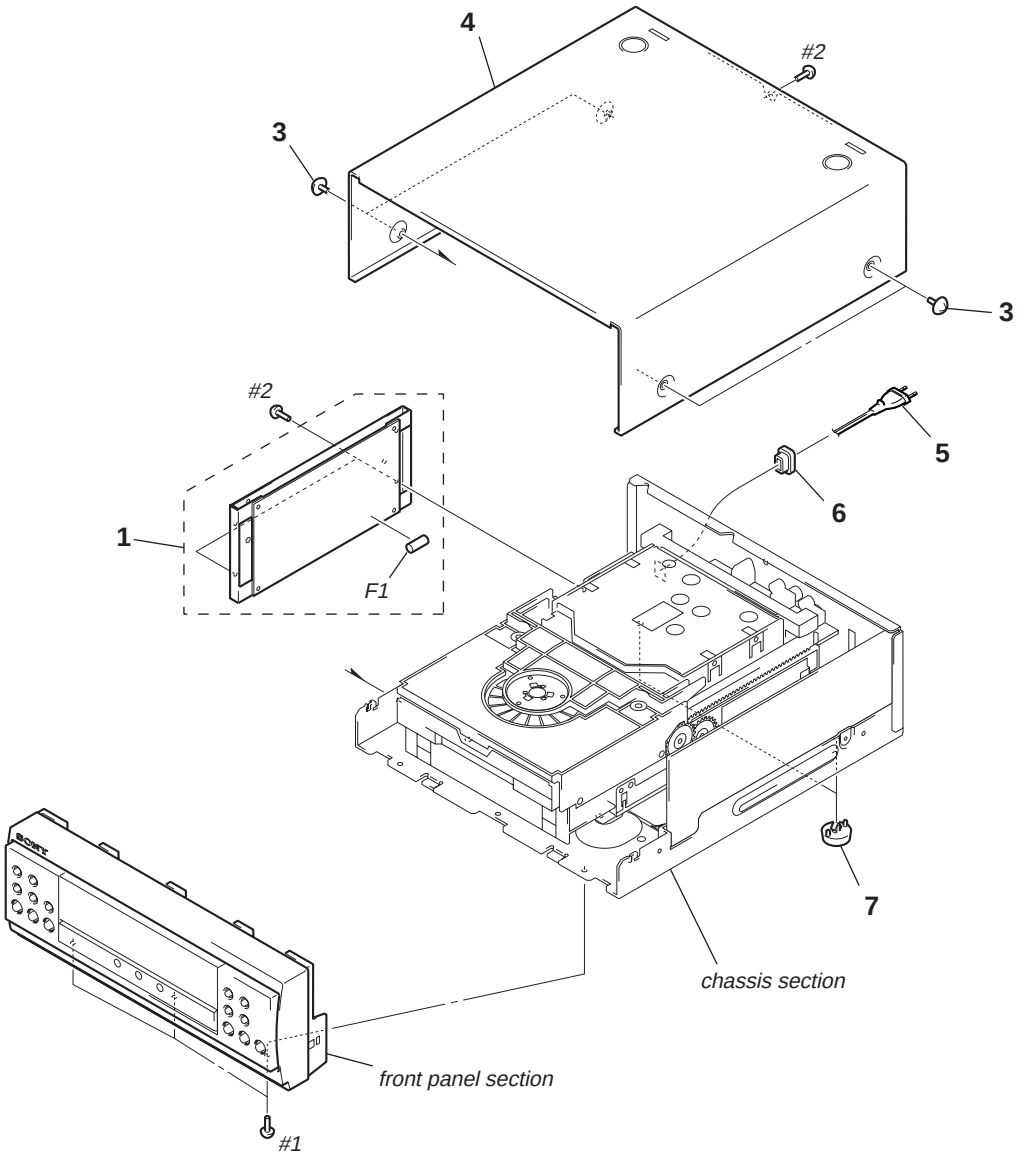
Pin No.	Pin Name	I/O	Description
62	VCC	—	Power supply terminal (+5V)
63	SOFT-TEST	O	For software check terminal Not used (open)
64	VSS	—	Ground terminal
65 to 68	LED_DISC1	O	LED drive signal output of the ① indicator (D705) "L": LED on
69 to 72	LED_DISC2	O	LED drive signal output of the ② indicator (D704) "L": LED on
73 to 76	LED_DISC3	O	LED drive signal output of the ③ indicator (D703) "L": LED on
77 to 80	LED_PLAY	O	LED drive signal output of the ► indicator (D702) "L": LED on
81 to 83	LED_PAUSE	O	LED drive signal output of the ❚❚ indicator (D701) "L": LED on
84	EXP-IN DATA	I	Serial data input terminal
85	EXP-OUT DATA	O	Serial data output terminal
86	EXP-LAT	O	Serial data latch pulse signal output terminal
87	EXP-CLK	O	Serial clock signal output terminal
88	LED_PAUSE	O	LED drive signal output of the ❚❚ indicator (D701) "L": LED on
89	A-SHUT	I	Shut off (deck-A) detection signal input terminal
90	B-SHUT	I	Shut off (deck-B) detection signal input terminal
91	B-HALF	I	Detection input terminal from the deck-B cassette detect switch "L": cassette in
92	MODEL-IN	I	Model destination setting terminal
93	PWRCHK	—	Power check terminal Fixed at "H"
94	KEY2	I	Key input terminal
95	KEY1	I	Key (S711 to S720) input terminal (A/D input)
96	AVSS	—	Ground terminal (for A/D converter)
97	KEY0	I	Key (S701 to S708) input terminal (A/D input)
98	VREF	I	Reference voltage (+5V) input terminal (for A/D converter)
99	AVCC	—	Power supply terminal (+5V) (for A/D converter)
100	NC	—	Not used (open)

SECTION 7
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

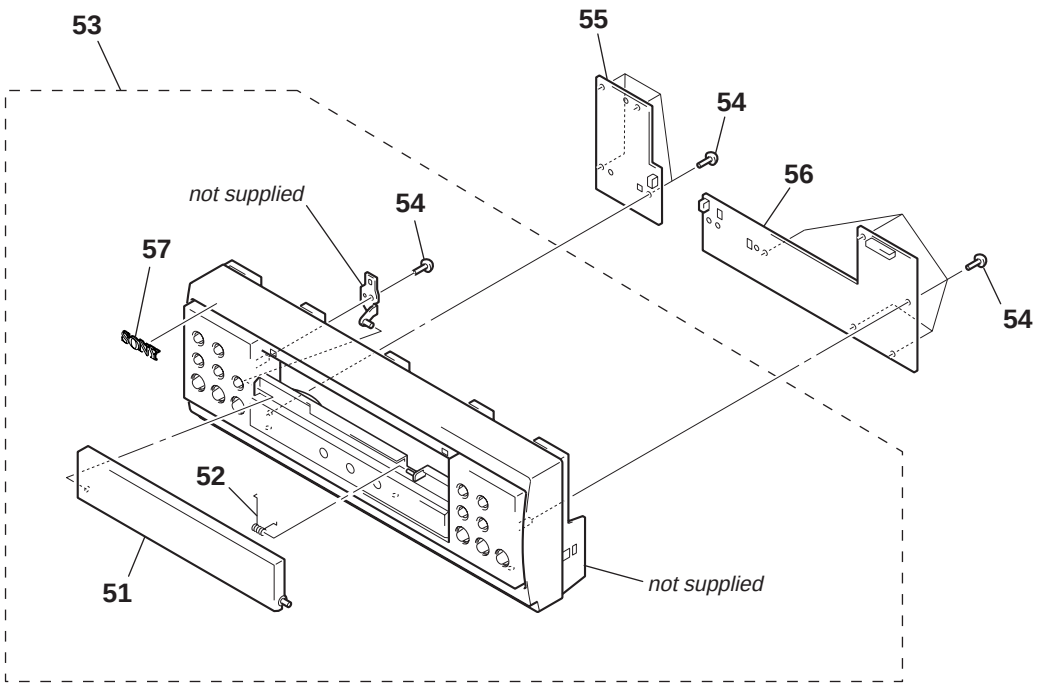
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CASE SECTION



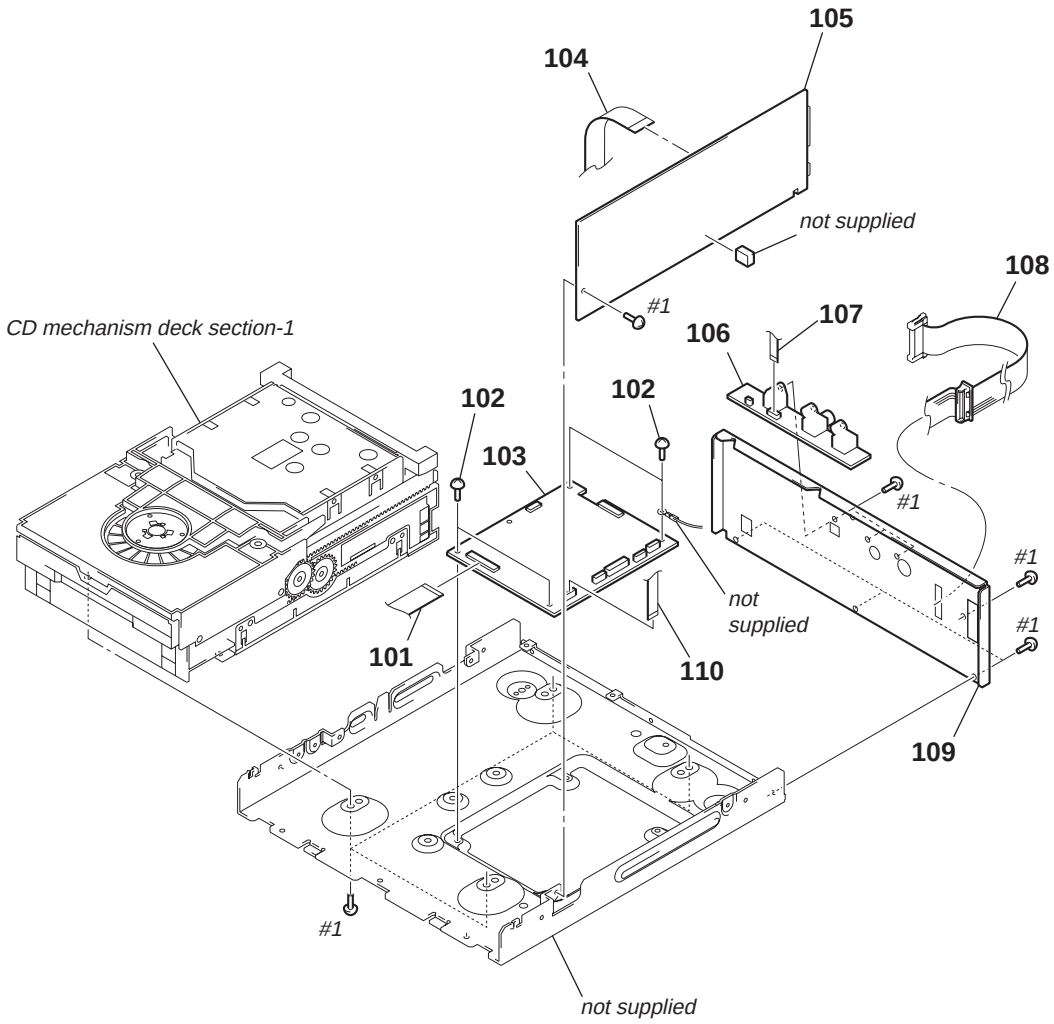
Ref. No.	Part No.	Description	Remark
⚠1	1-476-027-11	POWER BLOCK (AUS, EA, SP, TH)	
⚠1	1-476-028-11	POWER BLOCK (AEP, KR, UK)	
⚠1	1-476-029-11	POWER BLOCK (E, MX)	
3	3-363-099-21	SCREW (CASE 3 TP2)	
4	4-233-134-11	CASE	
⚠5	1-823-394-11	CORD, POWER (E, MX)	
⚠5	1-823-396-11	CORD, POWER (AEP, AUS, EA, SP, TH, UK)	
⚠5	1-823-399-11	CORD, POWER (KR)	
* 6	3-703-244-00	BUSHING (2104), CORD (AEP, AUS, EA, KR, SP, UK)	
6	3-703-571-11	BUSHING (S) (4516), CORD (E, MX, TH)	
7	4-965-822-01	FOOT	
⚠F1	1-532-388-31	MINIATURE FUSE-LINKS, TIME-LAG FUSE (T2AL/250V)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	4-233-136-21	LID (CD)	
52	4-233-147-01	SPRING (CD)	
53	X-4953-614-1	PANEL ASSY, FRONT	
54	4-951-620-01	SCREW (2.6X8), +BVTP	
55	1-682-814-11	SUB PANEL BOARD	
56	1-682-812-11	PANEL BOARD	
57	4-963-404-21	EMBLEM (5-A), SONY (TH)	

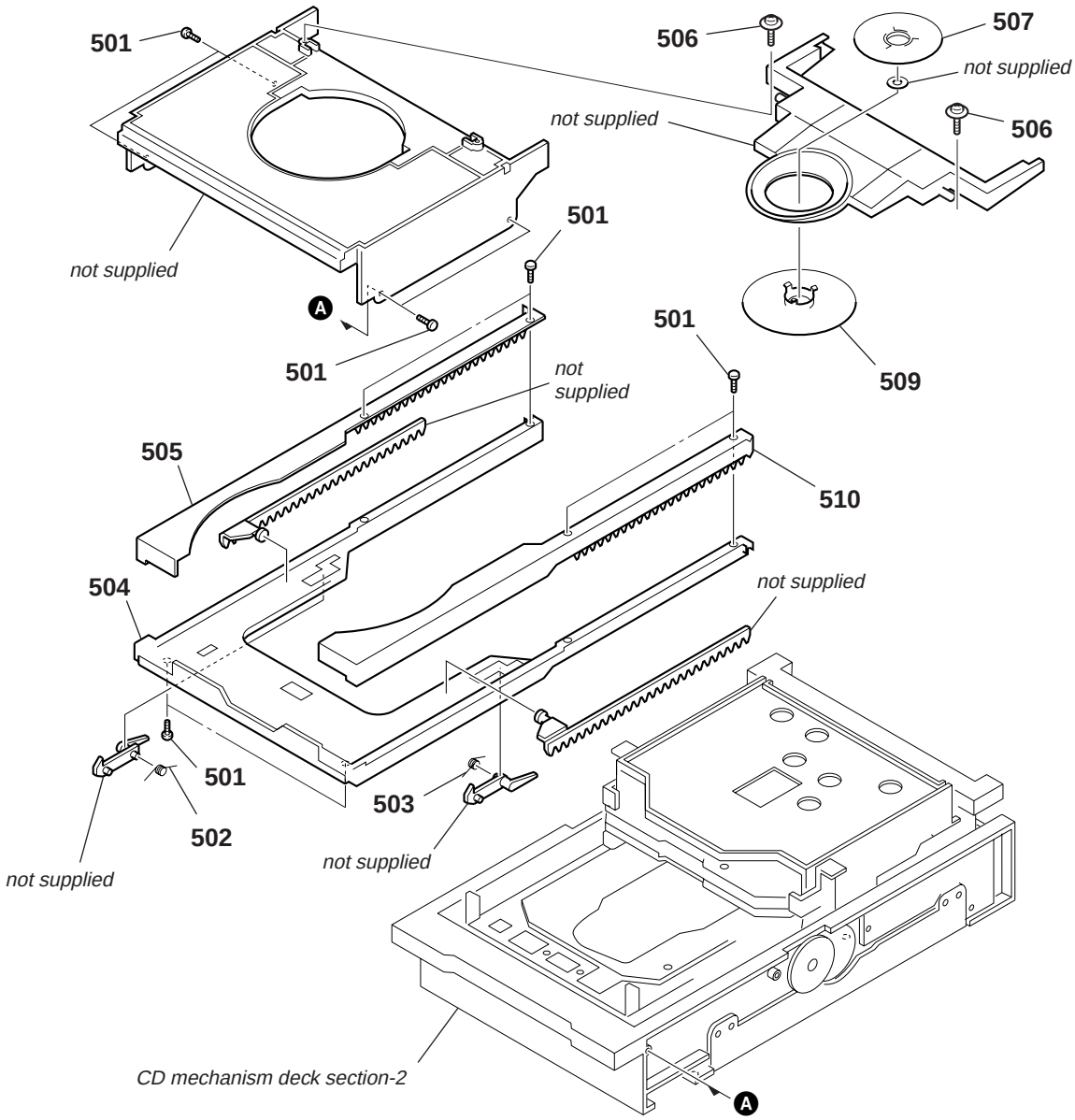
7-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	1-823-609-11	WIRE (FLAT TYPE) (25 CORE)	
102	3-970-608-01	SUMITITE (B3), +BV	
103	A-4727-239-A	MB BOARD, COMPLETE (AEP, UK)	
103	A-4727-244-A	MB BOARD, COMPLETE (AUS)	
103	A-4727-246-A	MB BOARD, COMPLETE (E, MX)	
103	A-4727-248-A	MB BOARD, COMPLETE (EA)	
103	A-4727-252-A	MB BOARD, COMPLETE (KR, SP, TH)	
104	1-823-608-11	WIRE (FLAT TYPE) (10 CORE)	
105	A-4727-237-A	MAIN BOARD, COMPLETE	
106	A-4727-238-A	VIDEO BOARD, COMPLETE	
107	1-823-607-11	WIRE (FLAT TYPE) (8 CORE)	
108	1-757-633-11	CORD (WITH CONNECTOR) 17P	

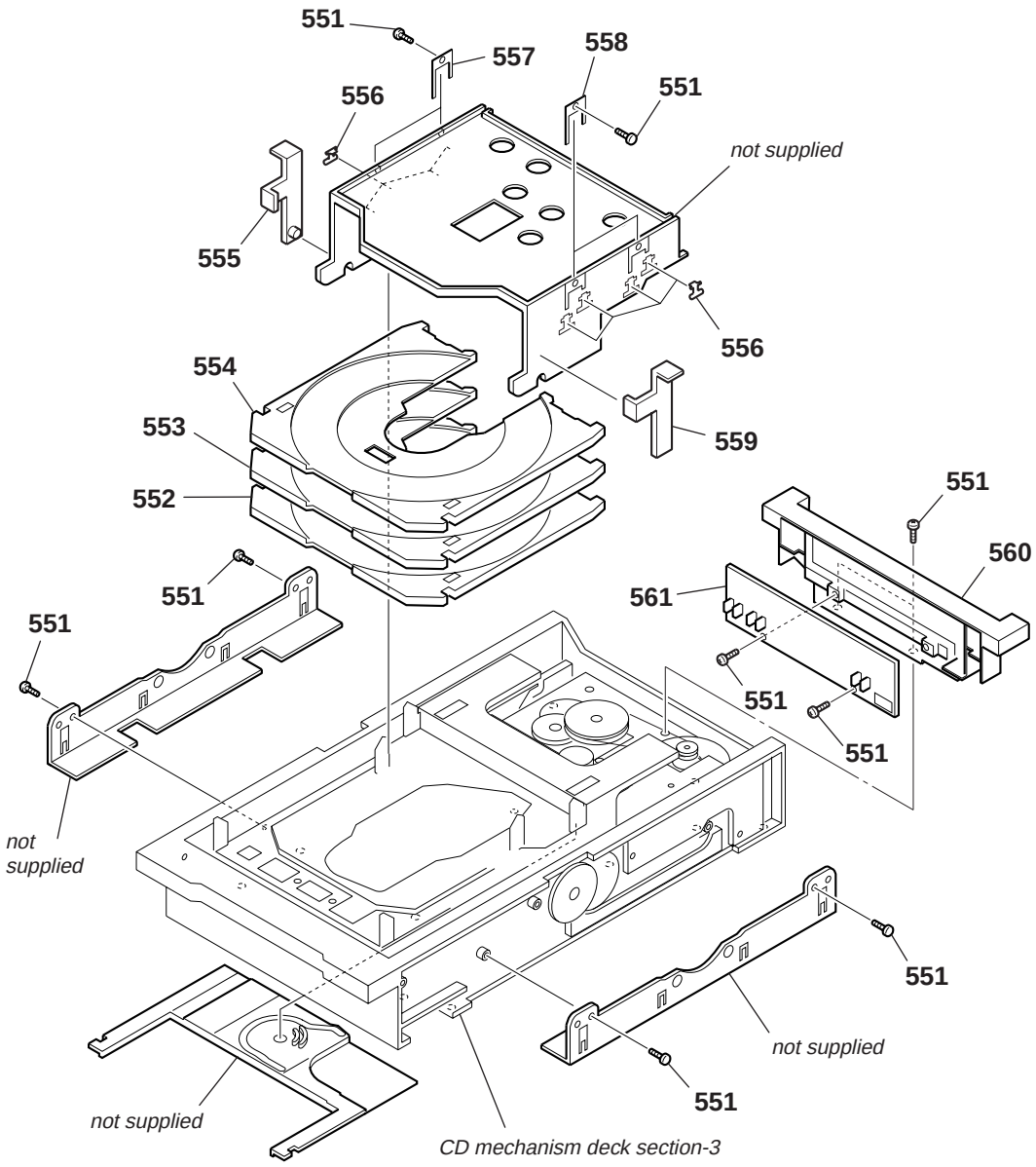
Ref. No.	Part No.	Description	Remark
109	4-236-808-01	PANEL (DVD), BACK (AEP)	
109	4-236-808-11	PANEL (DVD), BACK (UK)	
109	4-236-808-31	PANEL (DVD), BACK (KR)	
109	4-236-808-41	PANEL (DVD), BACK (SP)	
109	4-236-808-51	PANEL (DVD), BACK (EA)	
109	4-236-808-61	PANEL (DVD), BACK (AUS)	
109	4-236-808-71	PANEL (DVD), BACK (TH)	
109	4-236-808-81	PANEL (DVD), BACK (E)	
109	4-236-808-91	PANEL (DVD), BACK (MX)	
110	1-823-611-11	WIRE (FLAT TYPE) (9 CORE)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

7-4. CD MECHANISM DECK SECTION-1 (CDM63D)



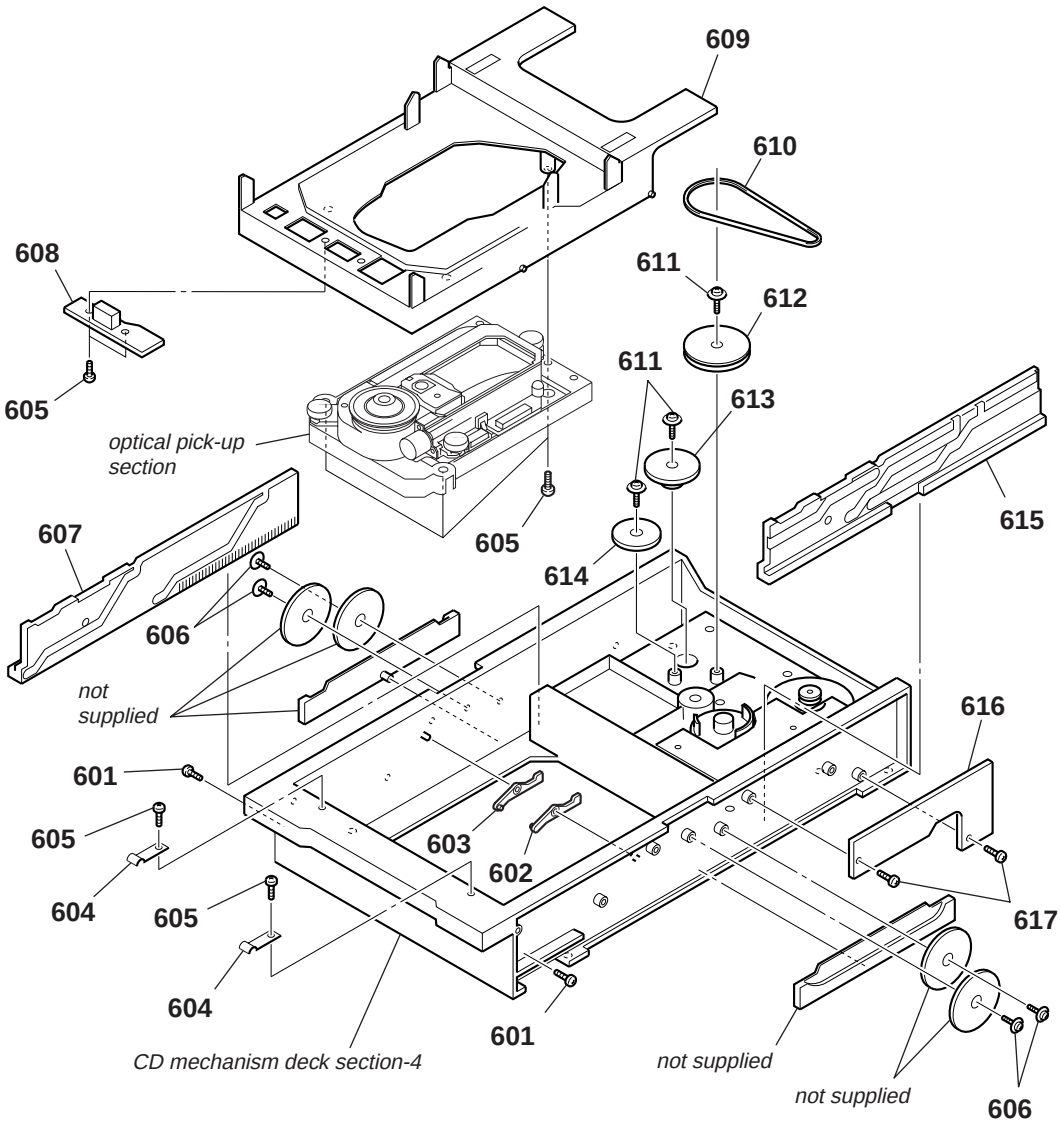
Ref. No.	Part No.	Description	Remark
501	4-218-253-01	SCREW (M2.6), +BTTP	
502	4-228-996-01	SPRING (R), TORSION	
503	4-228-995-01	SPRING (L), TORSION	
504	4-228-972-02	TRAY (MAIN)	
505	4-228-975-02	COVER (TRAY.L)	
506	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
507	4-234-121-01	PULLEY (A) (DVD), CHUCKING	
509	4-231-858-01	PULLEY (B.DVD)	
510	4-228-978-02	COVER (TRAY.R)	

7-5. CD MECHANISM DECK SECTION-2 (CDM63D)



Ref. No.	Part No.	Description	Remark
551	4-218-253-01	SCREW (M2.6), +BTTP	
552	4-228-970-22	TRAY (SUB)	
553	4-228-970-12	TRAY (SUB)	
554	4-228-970-02	TRAY (SUB)	
555	4-228-963-01	SLIDER (STOCKER.L)	
556	4-228-981-02	STOPPER (TRAY)	
557	4-234-423-01	SPRING (STOCKER L), LEAF	
558	4-228-980-01	SPRING (STOCKER), LEAF	
559	4-228-964-01	SLIDER (STOCKER.R)	
560	4-229-001-01	HOLDER (SENSOR)	
561	1-678-457-11	TRAY SENSOR BOARD	

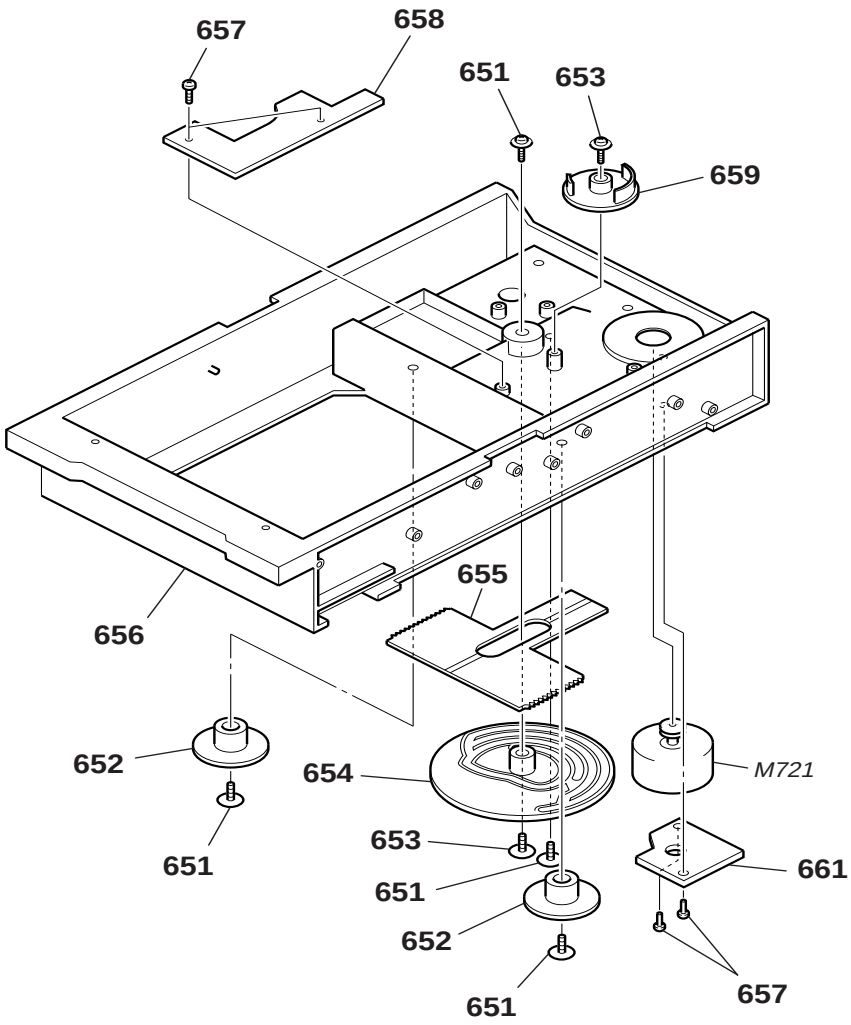
7-6. CD MECHANISM DECK SECTION-3 (CDM63D)



Ref. No.	Part No.	Description	Remark
601	4-218-253-71	SCREW (M2.6), +BTTP	
602	4-229-000-02	LEVER (MAIN.R)	
603	4-228-999-02	LEVER (MAIN.L)	
604	4-228-969-02	SPRING (TABLE), LEAF	
605	4-218-253-01	SCREW (M2.6), +BTTP	
606	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
607	4-228-977-01	SLIDER (BU.L)	
608	1-678-463-11	DISK SENSOR BOARD	
609	4-231-520-01	HOLDER (BU DVD)	

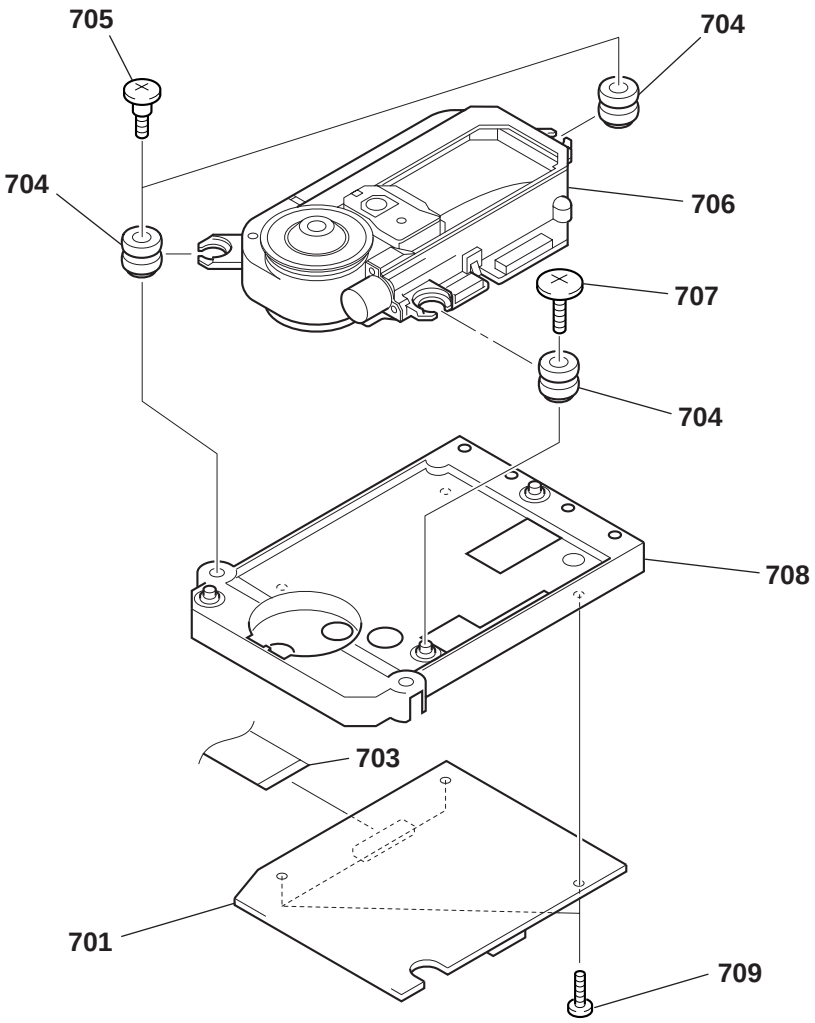
Ref. No.	Part No.	Description	Remark
610	4-228-968-01	BELT	
611	4-218-254-21	SCREW (M2.6), +PTPWH	
612	4-229-003-01	PULLEY	
613	4-228-997-02	GEAR (CAM)	
614	4-228-985-01	GEAR (PULLEY)	
615	4-228-976-01	SLIDER (BU.R)	
616	1-678-460-11	DRIVER BOARD	
617	4-218-253-61	SCREW (M2.6), +BTTP	

7-7. CD MECHANISM DECK SECTION-4 (CDM63D)



Ref. No.	Part No.	Description	Remark
651	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
652	4-229-002-02	GEAR (SLIDER)	
653	4-218-254-21	SCREW (M2.6), +PTPWH	
654	4-228-971-01	CAM	
655	4-228-974-02	RACK (CENTER)	
656	4-228-988-01	CHASSIS	
657	4-218-253-01	SCREW (M2.6), +BTTP	
658	1-678-462-11	IN OUT SW BOARD	
659	4-228-998-01	GEAR (DETECTION)	
661	1-678-461-11	MOTOR BOARD	
M721	X-4952-971-2	MOTOR ASSY (LOADING)	

7-8. OPTICAL PICK-UP SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
701	A-4727-278-A	RF BOARD, COMPLETE	
703	1-823-610-11	WIRE (FLAT TYPE) (26 CORE)	
704	3-053-847-01	INSULATOR	
705	4-981-923-01	SCREW (M), STEP	
⚠706	8-820-144-06	OPTICAL PICK-UP KHM-240AAA	
707	4-236-450-01	SCREW (L), STEP	
708	4-236-467-01	BASE (DVD), FITTING	
709	4-951-620-01	SCREW (2.6X8), BVTP	

SECTION 8
ELECTRICAL PARTS LIST

DISC SENSOR **DRIVER** **IN OUT SW** **MAIN**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- Abbreviation
  AUS : Australian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model
  TH : Thai model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	1-678-463-11	DISC SENSOR BOARD			
		**********			
		< PHOTO REFLECTOR >			
IC751	8-749-924-30	PHOTO REFLECTOR GP2S28			(DISC IN DETECT)
		< RESISTOR >			
R751	1-249-407-11	CARBON	150	5%	1/4W
	1-678-460-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C701	1-124-261-00	ELECT	10uF	20%	50V
C705	1-124-261-00	ELECT	10uF	20%	50V
C706	1-164-159-11	CERAMIC	0.1uF		50V
C707	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN701	1-785-324-11	PIN, CONNECTOR (STRAIGHT) 12P			
CN702	1-785-328-11	PIN, CONNECTOR (LIGHT ANGLE) 2P			
CN703	1-785-331-11	PIN, CONNECTOR (LIGHT ANGLE) 5P			
CN704	1-785-329-11	PIN, CONNECTOR (LIGHT ANGLE) 3P			
CN705	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P			
		< IC >			
IC701	8-759-598-69	IC BA6956AN			
		< TRANSISTOR >			
Q701	8-729-029-66	TRANSISTOR	RT1N141S-TP		
		< RESISTOR >			
R701	1-249-429-11	CARBON	10K	5%	1/4W
R702	1-249-401-11	CARBON	47	5%	1/4W
R705	1-249-435-11	CARBON	33K	5%	1/4W
R706	1-249-417-11	CARBON	1K	5%	1/4W
R707	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
	1-678-462-11	IN OUT SW BOARD			
		**********			
		< SWITCH >			
S741	1-771-821-11	SWITCH, PUSH (1 KEY) (IN)			
S742	1-771-821-11	SWITCH, PUSH (1 KEY) (OUT)			
	A-4727-237-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-164-159-11	CERAMIC	0.1uF		50V
C102	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-126-934-11	ELECT	220uF	20%	10V
C402	1-126-934-11	ELECT	220uF	20%	10V
C403	1-164-159-11	CERAMIC	0.1uF		50V
C404	1-164-159-11	CERAMIC	0.1uF		50V
C405	1-164-159-11	CERAMIC	0.1uF		50V
C406	1-126-934-11	ELECT	220uF	20%	10V
C407	1-126-934-11	ELECT	220uF	20%	10V
C408	1-164-159-11	CERAMIC	0.1uF		50V
C411	1-164-159-11	CERAMIC	0.1uF		50V
C425	1-162-282-31	CERAMIC	100PF	10%	50V
C427	1-162-282-31	CERAMIC	100PF	10%	50V
C500	1-164-159-11	CERAMIC	0.1uF		50V
C501	1-126-768-11	ELECT	2200uF	20%	16V
C502	1-126-935-11	ELECT	470uF	20%	10V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C505	1-164-159-11	CERAMIC	0.1uF		50V
C506	1-164-159-11	CERAMIC	0.1uF		50V
C507	1-164-159-11	CERAMIC	0.1uF		50V
C508	1-126-964-11	ELECT	10uF	20%	50V
C509	1-126-935-11	ELECT	470uF	20%	10V
C512	1-164-159-11	CERAMIC	0.1uF		50V
C513	1-126-935-11	ELECT	470uF	20%	10V
C514	1-126-947-11	ELECT	47uF	20%	10V
C557	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN101	1-568-419-11	PIN, CONNECTOR 9P			
CN102	1-568-373-11	PIN, CONNECTOR 8P			
CN103	1-566-859-11	SOCKET, CONNECTOR 15P			
					(SYSTEM CONTROL 5 FROM TC-S9)

MAIN MB

Ref. No.	Part No.	Description	Remark
CN107	1-779-278-11	CONNECTOR, FFC (LIF (NON-ZIF)) 10P	
* CN401	1-568-936-11	PIN, CONNECTOR 9P	
CN501	1-506-469-11	PIN, CONNECTOR 4P	
* CN503	1-568-937-11	PIN, CONNECTOR 10P	
		< DIODE >	
D105	8-719-911-19	DIODE 1SS133T-72	
D501	8-719-024-99	DIODE 11ES2-NTA2B	
D502	8-719-024-99	DIODE 11ES2-NTA2B	
D503	8-719-024-99	DIODE 11ES2-NTA2B	
D504	8-719-024-99	DIODE 11ES2-NTA2B	
D505	8-719-911-19	DIODE 1SS133T-72	
D512	8-719-024-99	DIODE 11ES2-NTA2B	
D513	8-719-024-99	DIODE 11ES2-NTA2B	
D514	8-719-024-99	DIODE 11ES2-NTA2B	
		< FERRITE BEAD >	
FB501	1-412-473-21	FERRITE BEAD	
FB502	1-412-473-21	FERRITE BEAD	
FB503	1-412-473-21	FERRITE BEAD	
		< IC >	
IC401	6-800-720-01	IC M30622MAA-B33FP	
IC501	8-759-071-48	IC TA7807S	
IC502	8-759-604-35	IC M5F78M05L	
		< CONNECTOR >	
* NO104	1-568-936-11	PIN, CONNECTOR 9P	
		< RESISTOR >	

Ref. No.	Part No.	Description			
R101	1-247-807-31	CARBON	100	5%	1/4W
R102	1-247-807-31	CARBON	100	5%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W
R104	1-247-807-31	CARBON	100	5%	1/4W
R132	1-247-876-11	CARBON	75K	5%	1/4W
R133	1-247-876-11	CARBON	75K	5%	1/4W
R134	1-249-417-11	CARBON	1K	5%	1/4W
R409	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-249-409-11	CARBON	220	5%	1/4W
R412	1-249-425-11	CARBON	4.7K	5%	1/4W
R413	1-249-411-11	CARBON	330	5%	1/4W
R417	1-249-429-11	CARBON	10K	5%	1/4W
R419	1-249-409-11	CARBON	220	5%	1/4W
R425	1-249-425-11	CARBON	4.7K	5%	1/4W
R427	1-249-425-11	CARBON	4.7K	5%	1/4W
R429	1-247-807-31	CARBON	100	5%	1/4W
R430	1-247-807-31	CARBON	100	5%	1/4W
R431	1-249-409-11	CARBON	220	5%	1/4W
R432	1-249-409-11	CARBON	220	5%	1/4W
R433	1-249-409-11	CARBON	220	5%	1/4W
R434	1-249-409-11	CARBON	220	5%	1/4W
R435	1-249-409-11	CARBON	220	5%	1/4W
R436	1-249-409-11	CARBON	220	5%	1/4W
R437	1-249-409-11	CARBON	220	5%	1/4W
R440	1-249-409-11	CARBON	220	5%	1/4W
R441	1-249-429-11	CARBON	10K	5%	1/4W
R442	1-249-409-11	CARBON	220	5%	1/4W

Ref. No.	Part No.	Description			
R443	1-249-409-11	CARBON	220	5%	1/4W
R444	1-249-409-11	CARBON	220	5%	1/4W
R447	1-249-409-11	CARBON	220	5%	1/4W
R448	1-249-409-11	CARBON	220	5%	1/4W
R451	1-249-429-11	CARBON	10K	5%	1/4W
R453	1-249-409-11	CARBON	220	5%	1/4W
R454	1-249-429-11	CARBON	10K	5%	1/4W
R455	1-249-409-11	CARBON	220	5%	1/4W
R456	1-249-429-11	CARBON	10K	5%	1/4W
R457	1-249-429-11	CARBON	10K	5%	1/4W
R459	1-249-409-11	CARBON	220	5%	1/4W
R465	1-249-407-11	CARBON	150	5%	1/4W
R469	1-249-407-11	CARBON	150	5%	1/4W
R473	1-249-407-11	CARBON	150	5%	1/4W
R477	1-249-407-11	CARBON	150	5%	1/4W
R480	1-249-441-11	CARBON	100K	5%	1/4W
R481	1-249-407-11	CARBON	150	5%	1/4W
R482	1-249-429-11	CARBON	10K	5%	1/4W
R483	1-249-429-11	CARBON	10K	5%	1/4W
R484	1-249-409-11	CARBON	220	5%	1/4W
R485	1-249-409-11	CARBON	220	5%	1/4W
R486	1-249-409-11	CARBON	220	5%	1/4W
R487	1-249-409-11	CARBON	220	5%	1/4W
R488	1-249-409-11	CARBON	220	5%	1/4W
R489	1-249-409-11	CARBON	220	5%	1/4W
R490	1-249-409-11	CARBON	220	5%	1/4W
R491	1-249-409-11	CARBON	220	5%	1/4W
R492	1-249-425-11	CARBON	4.7K	5%	1/4W
R493	1-249-415-11	CARBON	680	5%	1/4W
R494	1-247-807-31	CARBON	100	5%	1/4W
R495	1-249-410-11	CARBON	270	5%	1/4W
R496	1-249-429-11	CARBON	10K	5%	1/4W
R497	1-249-410-11	CARBON	270	5%	1/4W
R567	1-249-441-11	CARBON	100K	5%	1/4W

< VIBRATOR >

X401 1-781-107-21 VIBRATOR, CERAMIC (16MHz)

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A-4727-239-A MB BOARD, COMPLETE (AEP, UK)
A-4727-244-A MB BOARD, COMPLETE (AUS)
A-4727-246-A MB BOARD, COMPLETE (E, MX)
A-4727-248-A MB BOARD, COMPLETE (EA)
A-4727-252-A MB BOARD, COMPLETE (KR, SP, TH)
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< CAPACITOR >

Ref. No.	Part No.	Description			
C004	1-126-204-11	ELECT CHIP	47uF	20%	16V
C005	1-126-246-11	ELECT CHIP	220uF	20%	4V
C006	1-126-204-11	ELECT CHIP	47uF	20%	16V
C007	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C018	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C019	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-126-209-11	ELECT CHIP	100uF	20%	4V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C107	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V

Ref. No.	Part No.	Description			Remark
C108	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-126-209-11	ELECT CHIP	100uF	20%	4V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C112	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C113	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C119	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C124	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C203	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C204	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C205	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C206	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C207	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C301	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-126-246-11	ELECT CHIP	220uF	20%	4V
C305	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C306	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C309	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C310	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C311	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C312	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C313	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C315	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C317	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C318	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C319	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C320	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C334	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C335	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C339	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C341	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C342	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C345	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C346	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C347	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C348	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C349	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C350	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C351	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C352	1-126-204-11	ELECT CHIP	47uF	20%	16V
C401	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C402	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C403	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C404	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C405	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C407	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C408	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C411	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C412	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C413	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C416	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C417	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C418	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C419	1-126-204-11	ELECT CHIP	47uF	20%	16V
C420	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C429	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C430	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C501	1-126-193-11	ELECT	1uF	20%	50V
C502	1-117-370-11	CERAMIC CHIP	10uF		10V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C505	1-117-370-11	CERAMIC CHIP	10uF		10V
C506	1-117-370-11	CERAMIC CHIP	10uF		10V
C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-126-246-11	ELECT CHIP	220uF	20%	4V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C520	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C521	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C522	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C523	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C524	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C526	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C532	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C533	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C535	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C536	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C537	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C538	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C539	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

MB

Ref. No.	Part No.	Description			Remark
C540	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C541	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C542	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C545	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C546	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C547	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C701	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C702	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C711	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C712	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C716	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C717	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C721	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C722	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C741	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C742	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C743	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C744	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C745	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C764	1-126-193-11	ELECT	1uF	20%	50V
C765	1-126-193-11	ELECT	1uF	20%	50V
C766	1-126-193-11	ELECT	1uF	20%	50V
		< CONNECTOR >			
CN008	1-779-992-11	PIN, CONNECTOR (PWB) 8P			
CN010	1-784-875-21	CONNECTOR, FFC (LIF (NON-ZIF)) 25P			
CN012	1-784-860-21	CONNECTOR, FFC (LIF (NON-ZIF)) 8P			
CN015	1-784-368-11	CONNECTOR, FFC/FPC 9P			
CN101	1-784-369-21	CONNECTOR, FFC/FPC 10P			
CN103	1-793-687-11	PIN, CONNECTOR (1.5mm) (SMD) 5P			
* CN203	1-764-007-11	PIN, CONNECTOR (SMD) 12P			
CN404	1-793-687-11	PIN, CONNECTOR (1.5mm) (SMD) 5P			
		< FERRITE BEAD/RESISTOR >			
FB007	1-469-324-21	FERRITE BEAD			
FB008	1-469-324-21	FERRITE BEAD			
FB009	1-469-324-21	FERRITE BEAD			
FB010	1-469-324-21	FERRITE BEAD			
FB011	1-469-324-21	FERRITE BEAD			
FB012	1-469-324-21	FERRITE BEAD			
FB112	1-216-864-11	METAL CHIP	0	5%	1/16W
FB711	1-216-864-11	METAL CHIP	0	5%	1/16W
FB712	1-216-864-11	METAL CHIP	0	5%	1/16W
FB714	1-216-864-11	METAL CHIP	0	5%	1/16W
		< EMI FILTER >			
FL003	1-234-177-21	FILTER, CHIP EMI			
FL004	1-234-177-21	FILTER, CHIP EMI			
FL005	1-233-893-21	FILTER, CHIP EMI			
FL101	1-233-893-21	FILTER, CHIP EMI			
FL102	1-233-893-21	FILTER, CHIP EMI			
FL103	1-233-893-21	FILTER, CHIP EMI			
FL202	1-233-893-21	FILTER, CHIP EMI			
FL203	1-233-893-21	FILTER, CHIP EMI			
FL204	1-234-177-21	FILTER, CHIP EMI			
FL501	1-233-893-21	FILTER, CHIP EMI			
FL502	1-233-893-21	FILTER, CHIP EMI			
FL505	1-234-177-21	FILTER, CHIP EMI			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC006	6-700-398-01	IC uPC2918T-E1			
IC101	8-759-640-41	IC BR24C08F-E2			
IC102	8-759-831-81	IC IMIC6001BTD			
IC103	8-759-829-75	IC MB91307APFV-G-BND-E1			
IC106	8-759-645-76	IC TC74VHCT32AFT			
IC107	8-759-826-41	IC MBM29DL324BE-90PFTN			
IC202	6-700-740-01	IC LC22004A-RJ6-TBM-E			
IC301	8-759-599-45	IC MM1385ENLE			
IC302	8-759-828-01	IC CXD9635R			
IC303	8-759-683-75	IC MSM51V18160F-60TSKR1			
IC401	8-759-826-42	IC FAN8034			
IC501	8-759-832-30	IC TK71518ASCL			
IC502	8-759-599-45	IC MM1385ENLE			
IC503	8-752-399-55	IC CXD1933Q			
IC504	8-759-663-74	IC HY57V161610DTC-7TR			
IC505	8-759-663-74	IC HY57V161610DTC-7TR			
IC701	8-759-680-28	IC BA7666FS-E2			
		< COIL >			
L701	1-412-788-41	INDUCTOR	10uH		
L711	1-412-790-31	INDUCTOR	15uH		
L713	1-412-790-31	INDUCTOR	15uH		
L715	1-412-790-31	INDUCTOR	15uH		
		< TRANSISTOR >			
Q711	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q712	1-801-806-11	TRANSISTOR	DTC144EKA-T146		
		< RESISTOR >			
R017	1-216-864-11	METAL CHIP	0	5%	1/16W
R021	1-216-864-11	METAL CHIP	0	5%	1/16W
R076	1-216-837-11	METAL CHIP	22K	5%	1/16W
R077	1-216-815-11	METAL CHIP	330	5%	1/16W
R078	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R080	1-216-801-11	METAL CHIP	22	5%	1/16W
R101	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R105	1-216-833-11	METAL CHIP	10K	5%	1/16W
R106	1-216-833-11	METAL CHIP	10K	5%	1/16W
R107	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-797-11	METAL CHIP	10	5%	1/16W
R111	1-216-817-11	METAL CHIP	470	5%	1/16W
R112	1-216-821-11	METAL CHIP	1K	5%	1/16W
R113	1-216-833-11	METAL CHIP	10K	5%	1/16W
R114	1-216-845-11	METAL CHIP	100K	5%	1/16W
R116	1-216-833-11	METAL CHIP	10K	5%	1/16W
R117	1-216-821-11	METAL CHIP	1K	5%	1/16W
R118	1-216-821-11	METAL CHIP	1K	5%	1/16W
R119	1-216-833-11	METAL CHIP	10K	5%	1/16W
R121	1-216-833-11	METAL CHIP	10K	5%	1/16W
R123	1-216-833-11	METAL CHIP	10K	5%	1/16W
R124	1-216-797-11	METAL CHIP	10	5%	1/16W
R125	1-216-797-11	METAL CHIP	10	5%	1/16W
R126	1-216-797-11	METAL CHIP	10	5%	1/16W
R128	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R129	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R130	1-216-833-11	METAL CHIP	10K	5%	1/16W
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W
R134	1-216-833-11	METAL CHIP	10K	5%	1/16W
R136	1-216-797-11	METAL CHIP	10	5%	1/16W
R137	1-216-797-11	METAL CHIP	10	5%	1/16W
R138	1-216-797-11	METAL CHIP	10	5%	1/16W
R140	1-216-797-11	METAL CHIP	10	5%	1/16W
R141	1-216-797-11	METAL CHIP	10	5%	1/16W
R142	1-216-797-11	METAL CHIP	10	5%	1/16W
R143	1-216-833-11	METAL CHIP	10K	5%	1/16W
R145	1-216-833-11	METAL CHIP	10K	5%	1/16W
R146	1-216-833-11	METAL CHIP	10K	5%	1/16W
R147	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R149	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R150	1-216-821-11	METAL CHIP	1K	5%	1/16W (EA)
R150	1-216-827-11	METAL CHIP	3.3K	5%	1/16W (AUS)
R150	1-216-831-11	METAL CHIP	6.8K	5%	1/16W (KR, SP, TH)
R150	1-216-835-11	METAL CHIP	15K	5%	1/16W (AEP, UK)
R150	1-216-839-11	METAL CHIP	33K	5%	1/16W (E, MX)
R151	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R152	1-216-833-11	METAL CHIP	10K	5%	1/16W
R153	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R154	1-216-835-11	METAL CHIP	15K	5%	1/16W (AUS, E, MX)
R154	1-216-839-11	METAL CHIP	33K	5%	1/16W (KR, SP, TH)
R154	1-216-843-11	METAL CHIP	68K	5%	1/16W (AEP, EA, UK)
R155	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R156	1-216-833-11	METAL CHIP	10K	5%	1/16W
R157	1-216-864-11	METAL CHIP	0	5%	1/16W
R160	1-216-833-11	METAL CHIP	10K	5%	1/16W
R161	1-216-864-11	METAL CHIP	0	5%	1/16W
R162	1-216-833-11	METAL CHIP	10K	5%	1/16W
R163	1-216-833-11	METAL CHIP	10K	5%	1/16W
R164	1-216-809-11	METAL CHIP	100	5%	1/16W
R165	1-216-809-11	METAL CHIP	100	5%	1/16W
R166	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R167	1-216-821-11	METAL CHIP	1K	5%	1/16W
R168	1-216-821-11	METAL CHIP	1K	5%	1/16W
R170	1-216-821-11	METAL CHIP	1K	5%	1/16W
R172	1-216-833-11	METAL CHIP	10K	5%	1/16W
R174	1-216-797-11	METAL CHIP	10	5%	1/16W
R175	1-216-864-11	METAL CHIP	0	5%	1/16W
R179	1-216-833-11	METAL CHIP	10K	5%	1/16W
R182	1-216-845-11	METAL CHIP	100K	5%	1/16W
R183	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R184	1-216-833-11	METAL CHIP	10K	5%	1/16W
R185	1-216-833-11	METAL CHIP	10K	5%	1/16W
R186	1-216-833-11	METAL CHIP	10K	5%	1/16W
R187	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R188	1-216-833-11	METAL CHIP	10K	5%	1/16W
R199	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R202	1-216-809-11	METAL CHIP	100	5%	1/16W
R203	1-216-821-11	METAL CHIP	1K	5%	1/16W
R206	1-216-813-11	METAL CHIP	220	5%	1/16W
R207	1-216-813-11	METAL CHIP	220	5%	1/16W
R208	1-216-821-11	METAL CHIP	1K	5%	1/16W
R209	1-216-821-11	METAL CHIP	1K	5%	1/16W
R210	1-216-821-11	METAL CHIP	1K	5%	1/16W
R211	1-216-821-11	METAL CHIP	1K	5%	1/16W
R212	1-216-821-11	METAL CHIP	1K	5%	1/16W
R214	1-216-833-11	METAL CHIP	10K	5%	1/16W
R215	1-216-833-11	METAL CHIP	10K	5%	1/16W
R299	1-216-847-11	METAL CHIP	150K	5%	1/16W
R301	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R302	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R305	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R306	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R307	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R308	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R309	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R310	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R311	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R312	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R313	1-216-817-11	METAL CHIP	470	5%	1/16W
R314	1-216-817-11	METAL CHIP	470	5%	1/16W
R315	1-216-817-11	METAL CHIP	470	5%	1/16W
R316	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R317	1-216-833-11	METAL CHIP	10K	5%	1/16W
R318	1-216-864-11	METAL CHIP	0	5%	1/16W
R319	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R320	1-216-864-11	METAL CHIP	0	5%	1/16W
R321	1-216-817-11	METAL CHIP	470	5%	1/16W
R328	1-216-833-11	METAL CHIP	10K	5%	1/16W
R329	1-216-864-11	METAL CHIP	0	5%	1/16W
R330	1-216-864-11	METAL CHIP	0	5%	1/16W
R332	1-216-864-11	METAL CHIP	0	5%	1/16W
R334	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R335	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R336	1-216-833-11	METAL CHIP	10K	5%	1/16W
R337	1-216-809-11	METAL CHIP	100	5%	1/16W
R338	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R341	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R342	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R343	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R344	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R345	1-216-833-11	METAL CHIP	10K	5%	1/16W
R349	1-216-838-11	METAL CHIP	27K	5%	1/16W
R350	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R351	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R352	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R356	1-218-853-11	METAL CHIP	1.8K	0.5%	1/10W
R368	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R384	1-216-797-11	METAL CHIP	10	5%	1/16W
R385	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R406	1-216-846-11	METAL CHIP	120K	5%	1/16W
R407	1-216-846-11	METAL CHIP	120K	5%	1/16W
R408	1-216-847-11	METAL CHIP	150K	5%	1/16W
R409	1-216-847-11	METAL CHIP	150K	5%	1/16W

MB **MOTOR** **PANEL** **RF**

Ref. No.	Part No.	Description			Remark
R410	1-216-842-11	METAL CHIP	56K	5%	1/16W
R411	1-216-842-11	METAL CHIP	56K	5%	1/16W
R412	1-216-850-11	METAL CHIP	270K	5%	1/16W
R413	1-216-833-11	METAL CHIP	10K	5%	1/16W
R414	1-216-853-11	METAL CHIP	470K	5%	1/16W
R415	1-216-846-11	METAL CHIP	120K	5%	1/16W
R416	1-216-855-11	METAL CHIP	680K	5%	1/16W
R417	1-216-833-11	METAL CHIP	10K	5%	1/16W
R418	1-216-839-11	METAL CHIP	33K	5%	1/16W
R419	1-216-839-11	METAL CHIP	33K	5%	1/16W
R420	1-216-853-11	METAL CHIP	470K	5%	1/16W
R421	1-216-839-11	METAL CHIP	33K	5%	1/16W
R422	1-216-839-11	METAL CHIP	33K	5%	1/16W
R423	1-216-839-11	METAL CHIP	33K	5%	1/16W
R424	1-216-839-11	METAL CHIP	33K	5%	1/16W
R425	1-216-849-11	METAL CHIP	220K	5%	1/16W
R426	1-216-853-11	METAL CHIP	470K	5%	1/16W
R427	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R428	1-216-839-11	METAL CHIP	33K	5%	1/16W
R429	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R430	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R431	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R432	1-216-833-11	METAL CHIP	10K	5%	1/16W
R433	1-216-833-11	METAL CHIP	10K	5%	1/16W
R434	1-216-815-11	METAL CHIP	330	5%	1/16W
R435	1-216-833-11	METAL CHIP	10K	5%	1/16W
R439	1-216-864-11	METAL CHIP	0	5%	1/16W
R507	1-216-809-11	METAL CHIP	100	5%	1/16W
R508	1-216-864-11	METAL CHIP	0	5%	1/16W
R509	1-216-864-11	METAL CHIP	0	5%	1/16W
R510	1-216-833-11	METAL CHIP	10K	5%	1/16W
R511	1-216-813-11	METAL CHIP	220	5%	1/16W
R512	1-216-813-11	METAL CHIP	220	5%	1/16W
R513	1-216-813-11	METAL CHIP	220	5%	1/16W
R514	1-216-813-11	METAL CHIP	220	5%	1/16W
R515	1-216-813-11	METAL CHIP	220	5%	1/16W
R516	1-216-813-11	METAL CHIP	220	5%	1/16W
R517	1-216-833-11	METAL CHIP	10K	5%	1/16W
R518	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R521	1-216-864-11	METAL CHIP	0	5%	1/16W
R522	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R524	1-216-833-11	METAL CHIP	10K	5%	1/16W
R525	1-216-833-11	METAL CHIP	10K	5%	1/16W
R532	1-216-833-11	METAL CHIP	10K	5%	1/16W
R533	1-216-797-11	METAL CHIP	10	5%	1/16W
R554	1-216-797-11	METAL CHIP	10	5%	1/16W
R701	1-216-833-11	METAL CHIP	10K	5%	1/16W
R711	1-218-289-11	RES-CHIP	510	5%	1/16W
R712	1-218-289-11	RES-CHIP	510	5%	1/16W
R713	1-218-289-11	RES-CHIP	510	5%	1/16W
R717	1-218-285-11	RES-CHIP	75	5%	1/16W
R718	1-218-285-11	RES-CHIP	75	5%	1/16W
R719	1-218-285-11	RES-CHIP	75	5%	1/16W
R724	1-216-833-11	METAL CHIP	10K	5%	1/16W
R725	1-216-833-11	METAL CHIP	10K	5%	1/16W
R737	1-216-864-11	METAL CHIP	0	5%	1/16W
R738	1-216-864-11	METAL CHIP	0	5%	1/16W
R739	1-216-864-11	METAL CHIP	0	5%	1/16W
R740	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VARIABLE RESISTOR >			
RV501	1-223-583-11	RES, ADJ, CARBON 1K			
		< VIBRATOR >			
X101	1-795-174-11	VIBRATOR, CERAMIC (16.5MHz)			
X102	1-767-519-11	VIBRATOR, CRYSTAL (27MHz)			
**********					
	1-678-461-11	MOTOR BOARD			
		**********			
		< CAPACITOR >			
C721	1-162-306-11	CERAMIC	0.01uF	30%	16V
**********					
	1-682-812-11	PANEL BOARD			
		**********			
		< DIODE >			
D701	8-719-057-97	LED SEL5923A-TP15 (❚❚)			
D702	8-719-058-03	LED SEL5423E-TP15 (►)			
D703	8-719-057-97	LED SEL5923A-TP15 (③ (DISC 3))			
D704	8-719-057-97	LED SEL5923A-TP15 (② (DISC 2))			
D705	8-719-057-97	LED SEL5923A-TP15 (① (DISC 1))			
		< RESISTOR >			
R711	1-249-411-11	CARBON	330	5%	1/4W
R712	1-249-413-11	CARBON	470	5%	1/4W
R713	1-249-414-11	CARBON	560	5%	1/4W
R714	1-249-415-11	CARBON	680	5%	1/4W
R715	1-249-417-11	CARBON	1K	5%	1/4W
R716	1-249-418-11	CARBON	1.2K	5%	1/4W
R717	1-249-420-11	CARBON	1.8K	5%	1/4W
R718	1-249-422-11	CARBON	2.7K	5%	1/4W
R719	1-247-843-11	CARBON	3.3K	5%	1/4W
		< SWITCH >			
S711	1-771-410-21	SWITCH, TACTILE (◄◄)			
S712	1-771-410-21	SWITCH, TACTILE (►►)			
S713	1-771-410-21	SWITCH, TACTILE (►►I)			
S714	1-771-410-21	SWITCH, TACTILE (I◄◄)			
S715	1-771-410-21	SWITCH, TACTILE (■)			
S716	1-771-410-21	SWITCH, TACTILE (❚❚)			
S717	1-771-410-21	SWITCH, TACTILE (►)			
S718	1-771-410-21	SWITCH, TACTILE (RETURN)			
S719	1-771-410-21	SWITCH, TACTILE (PREV)			
S720	1-771-410-21	SWITCH, TACTILE (NEXT)			
**********					
	A-4727-278-A	RF BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C005	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C006	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V

RF | SUB PANEL | TRAY SENSOR

Ref. No.	Part No.	Description			Remark
C007	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C008	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C009	1-124-779-00	ELECT CHIP	10uF	20%	16V
C015	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C016	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C017	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C018	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C019	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C021	1-124-779-00	ELECT CHIP	10uF	20%	16V
C022	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C023	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C024	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C025	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C026	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C027	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C028	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C031	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C032	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C033	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C034	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C035	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C036	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C038	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C039	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C040	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C043	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C044	1-124-779-00	ELECT CHIP	10uF	20%	16V
C046	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C047	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C048	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN001	1-766-835-21	CONNECTOR, FFC/FPC (ZIF) 26P			
CN002	1-784-875-21	CONNECTOR, FFC (LIF (NON-ZIF)) 25P			
		< DIODE >			
D001	8-719-988-61	DIODE 1SS355TE-17			
D004	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC001	8-759-828-02	IC SP3728AC			
		< COIL >			
L001	1-412-031-11	INDUCTOR CHIP	47uH		
L002	1-412-031-11	INDUCTOR CHIP	47uH		
		< TRANSISTOR >			
Q001	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
Q002	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
		< RESISTOR >			
R002	1-216-809-11	METAL CHIP	100	5%	1/16W
R003	1-216-809-11	METAL CHIP	100	5%	1/16W
R005	1-216-845-11	METAL CHIP	100K	5%	1/16W
R006	1-216-838-11	METAL CHIP	27K	5%	1/16W
R007	1-216-803-11	METAL CHIP	33	5%	1/16W

Ref. No.	Part No.	Description			Remark
R008	1-216-803-11	METAL CHIP	33	5%	1/16W
R009	1-216-821-11	METAL CHIP	1K	5%	1/16W
R010	1-216-841-11	METAL CHIP	47K	5%	1/16W
R011	1-216-809-11	METAL CHIP	100	5%	1/16W
R020	1-216-803-11	METAL CHIP	33	5%	1/16W
R023	1-216-803-11	METAL CHIP	33	5%	1/16W
R025	1-216-841-11	METAL CHIP	47K	5%	1/16W
R029	1-216-809-11	METAL CHIP	100	5%	1/16W
R037	1-216-834-11	METAL CHIP	12K	5%	1/16W
R038	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R045	1-216-809-11	METAL CHIP	100	5%	1/16W
**********					
	1-682-814-11	SUB PANEL BOARD			
		**********			
R701	1-249-411-11	CARBON	330	5%	1/4W
R702	1-249-413-11	CARBON	470	5%	1/4W
R703	1-249-414-11	CARBON	560	5%	1/4W
R704	1-249-415-11	CARBON	680	5%	1/4W
R705	1-249-417-11	CARBON	1K	5%	1/4W
R706	1-249-418-11	CARBON	1.2K	5%	1/4W
R707	1-249-420-11	CARBON	1.8K	5%	1/4W
		< SWITCH >			
S701	1-771-410-21	SWITCH, TACTILE (DISC 3)			
S702	1-771-410-21	SWITCH, TACTILE (DISC 2)			
S703	1-771-410-21	SWITCH, TACTILE (DISC 1)			
S704	1-771-410-21	SWITCH, TACTILE (⏏ (DISC 1))			
S705	1-771-410-21	SWITCH, TACTILE (⏏ (DISC 2))			
S706	1-771-410-21	SWITCH, TACTILE (⏏ (DISC 3))			
S707	1-771-410-21	SWITCH, TACTILE (REPEAT)			
S708	1-771-410-21	SWITCH, TACTILE (PLAY MODE)			
**********					
	1-678-457-11	TRAY SENSOR BOARD			
		**********			
		< CAPACITOR >			
C731	1-164-159-11	CERAMIC	0.1uF		50V
		< PHOTO SENSOR >			
IC731	8-749-081-01	PHOTO SENSOR DG-264 (SUB TRAY 1 HEIGHT SENSOR)			
IC732	8-749-081-01	PHOTO SENSOR DG-264 (SUB TRAY 2 HEIGHT SENSOR)			
IC733	8-749-081-01	PHOTO SENSOR DG-264 (SUB TRAY 3 HEIGHT SENSOR)			
		< RESISTOR >			
R731	1-247-876-11	CARBON	75K	5%	1/4W
R732	1-249-408-11	CARBON	180	5%	1/4W
R733	1-247-876-11	CARBON	75K	5%	1/4W
R734	1-249-408-11	CARBON	180	5%	1/4W
R735	1-247-876-11	CARBON	75K	5%	1/4W
R736	1-249-408-11	CARBON	180	5%	1/4W
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VIDEO

Ref. No.	Part No.	Description			Remark
	A-4727-238-A	VIDEO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C203	1-164-159-11	CERAMIC	0.1uF		50V
C204	1-126-934-11	ELECT	220uF	20%	10V
C206	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN201	1-779-276-11	CONNECTOR, FFC (LIF (NON-ZIF)) 8P			
CN202	1-568-951-11	PIN, CONNECTOR 2P			
		< FERRITE BEAD >			
FB201	1-412-473-21	FERRITE BEAD			
FB202	1-412-473-21	FERRITE BEAD			
FB203	1-412-473-21	FERRITE BEAD			
FB204	1-412-473-21	FERRITE BEAD			
		< IC >			
IC201	8-749-923-04	IC TOTX178A (OPTICAL OUT TO ST-S9)			
		< JACK >			
J201	1-537-943-11	CONNECTOR (DIN) 1P (S VIDEO OUT)			
J202	1-794-970-11	JACK, PIN 1P (VIDEO OUT)			
		< COIL >			
L201	1-410-525-11	INDUCTOR	220uH		
**********					
		MISCELLANEOUS			
		**********			
⚠1	1-476-027-11	POWER BLOCK (AUS, EA, SP, TH)			
⚠1	1-476-028-11	POWER BLOCK (AEP, KR, UK)			
⚠1	1-476-029-11	POWER BLOCK (E, MX)			
⚠5	1-823-394-11	CORD, POWER (E, MX)			
⚠5	1-823-396-11	CORD, POWER (AEP, AUS, EA, SP, TH, UK)			
⚠5	1-823-399-11	CORD, POWER (KR)			
101	1-823-609-11	WIRE (FLAT TYPE) (25 CORE)			
104	1-823-608-11	WIRE (FLAT TYPE) (10 CORE)			
107	1-823-607-11	WIRE (FLAT TYPE) (8 CORE)			
108	1-757-633-11	CORD (WITH CONNECTOR) 17P			
702	1-823-611-11	WIRE (FLAT TYPE) (9 CORE)			
703	1-823-610-11	WIRE (FLAT TYPE) (26 CORE)			
⚠706	8-820-144-06	OPTICAL PICK-UP KHM-240AAA			
⚠F1	1-532-388-31	MINIATURE FUSE-LINKS, TIME-LAG FUSE			(T2AL/250V)
M721	X-4952-971-2	MOTOR ASSY (LOADING)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.09	New